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## THE PROBLEM OF GASTRIC CANCER


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NEW YORK


The prodigious effort expended by the medical profession in the study of malignant diseases probably has had less effect on mortality from gastric cancer than on that from any other of the common types of carcinoma. While gratifying progress has been made in the treatment of cancer of the skin, nasopharynx, larynx, cervix uteri and the breast, cancer of the gastrointestinal tract, and most particularly of the stomach, remains a highly lethal disease. A favorable outcome in gastric cancer is so unusual that most practicing physicians have never witnessed a cure. Indeed, only those privileged to observe, over a long period of time, large numbers of patients with cancer of the stomach are in a position to know of the occasional cures. In a disease with such a dismal outlook it seems prudent to review its salient features to determine (1) whether this outlook is justified and (2) what is to be done to correct the situation.

To illustrate the problems, the experience of the New York Hospital in cancer of the stomach since September 1932 is analyzed. It is recognized that the number of patients who have passed the five year period is small, a factor which may somewhat distort the end results. It is hoped that there may be occasion to present this same material from time to time, modified by further experience with the same cases and augmented by new cases studied in the interim.

### CLINICAL MATERIAL

During the seven and a third year period from September 1932 to 1940, 264 patients with proved cancer of the stomach were admitted to the medical and surgical pavilions of the New York Hospital. It is felt important to include both the medical and the surgical cases to portray a well rounded picture of the disease as it is encountered in a large general hospital. In 88 of the cases (33⅓ per cent) the disease was sufficiently advanced to be considered inoperable clinically. In 91 cases (34.5 per cent) an exploratory laparotomy was done, with 7 deaths occurring in the hospital after exploration, an operative mortality of 7.7 per cent. In 21 cases (7.9 per cent) a palliative gastroenterostomy was done, with 5 operative deaths, a mortality of 23.8 per cent. In 7 cases (2.7 per cent) miscellaneous procedures such as colostomy, gastrostomy or total gastrectomy were done, with 6 operative deaths (85.5 per cent). In 16 cases (6.1 per cent) a palliative gastric resection was done in the presence of metastasis which could not be removed, with 2 operative deaths (12.5 per cent). Only 41 out of the total of 264 cases (15.5 per cent) were sufficiently early to be considered curable by surgical methods. In these a partial gastrectomy was done, with 4 operative deaths, an operative mortality of 9.8 per cent. The combined mortality for both the palliative and the curative resections was 10.5 per cent. These data are shown graphically in the accompanying chart.


From the Department of Surgery of the New York Hospital and Cornell University Medical College.



Carried out under a grant from the National Cancer Institute of the U. S. Public Health Service, Washington, D. C.


### RESULTS

All of the 223 patients (84.5 per cent) with cancer too advanced for hope of surgical cure were doomed to die. The average duration of life after admission to the hospital in this group is given in table 1.

The variation in the duration of life in these groups is largely explained by the extent of the gastric lesions when the patients were admitted to the hospital. Obviously, those patients with cancer sufficiently advanced to be clinically inoperable should live a shorter time than those found inoperable only by exploration. Though the duration of life after palliative resection or palliative gastroenterostomy is not strikingly prolonged, there is no question concerning the value of these procedures. Most of the palliative gastroenterostomies were performed for pyloric obstruction, and there is no doubt that some months were added to the duration of life in this group. Vastly more important than the few months of life, however, is the fact that in general this group was clinically improved by gastroenterostomy. In most instances there was a cessation of vomiting, an increase in appetite and some gain in weight. Two patients of this group enjoyed two years of practically normal life.

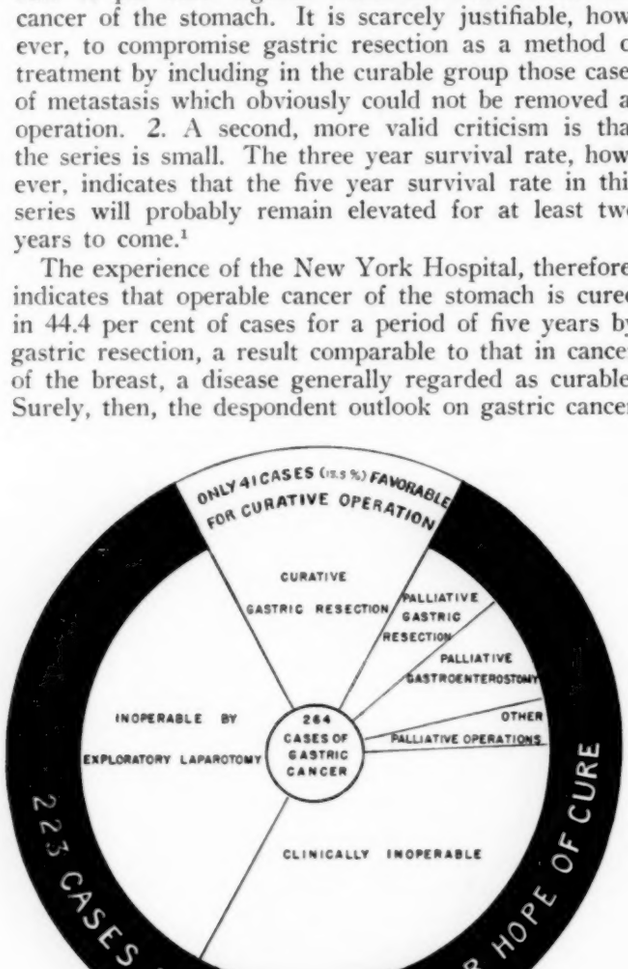
Clinical improvement in the group of palliative gastric resections was even more striking, though the average duration of life was not quite as great as that in the palliative gastroenterostomies. Many of these patients were able to lead essentially normal lives until a few months before death. The usual prolonged period of disability was greatly shortened, and the final period of decline was relatively rapid. So general was the improvement in the palliative resection group that this procedure usually is felt to be indicated when it is mechanically possible to remove all of the gastric tumor.

Of the 41 patients on whom curative gastric resections were performed, 15 are now dead, the average duration of life after operation being sixteen months. Only 9 patients had curative resections done five or more years ago. Of these, 4 are living and free from disease, a five year survival rate of 44.4 per cent. Of the 17 patients on whom curative resections were done three or more years ago, 10 are living and free from disease, a three year survival rate of 58.8 per cent.

These figures are sufficiently striking to warrant scrutiny. They are open to question in two ways: 1.

In separating the curative and palliative resections there has been some selection of cases. If the end results are calculated for all resections, the three year survival rate is 52.6 per cent and the five year survival rate 40 per cent—figures which are still unusual for cancer of the stomach. It is scarcely justifiable, however, to compromise gastric resection as a method of treatment by including in the curable group those cases of metastasis which obviously could not be removed at operation. 2. A second, more valid criticism is that the series is small. The three year survival rate, however, indicates that the five year survival rate in this series will probably remain elevated for at least two years to come.[1]

The experience of the New York Hospital, therefore, indicates that operable cancer of the stomach is cured in 44.4 per cent of cases for a period of five years by gastric resection, a result comparable to that in cancer of the breast, a disease generally regarded as curable. Surely, then, the despondent outlook on gastric cancer


ONLY 41 CASES (15.5 %) FAVORABLE FOR CURATIVE OPERATION
CURATIVE GASTRIC RESECTION
PALLIATIVE GASTRIC RESECTION
PALLIATIVE GASTROENTEROSTOMY
OTHER PALLIATIVE OPERATIONS
CLINICALLY INOPERABLE
INOPERABLE BY EXPLORATORY LAPAROTOMY
264 CASES OF GASTRIC CANCER
223 CASES TOO ADVANCED FOR HOPE OF CURE

Observations in 264 cases of gastric cancer.

is not justified. But this optimistic side of the picture is seen only by the surgeon who follows operable cases. The physician in general practice is likely to be more impressed by a broader picture, that these four cures represent only 5.4 per cent of the 72 patients admitted to the hospital five or more years ago, a picture that emphasizes the rarity of the cures of gastric cancer.

## TREATMENT

No treatment other than the surgical treatment of gastric cancer is worthy of mention. In view of the basic pathologic condition (neoplastic infiltration of a hollow viscus) it seems likely that roentgen therapy will never furnish a rational attack on the disease. Still the record of surgical intervention as a method of treatment is so poor that cures for the group as a whole are distinctly rare. It is not to be assumed that surgery has made no progress in its attack on the disease. During the sixty years since Billroth performed the first successful partial gastrectomy, the mortality of the operation has been reduced from a formidable figure to about 10 per cent or less in the hands of competent surgeons. It is clear that this figure will be further reduced by continued concentrated effort. But this progress has been largely confined to making gastric resection a safer operation. The physician cannot rely on the surgeon to improve the outlook on gastric cancer by further refinements in surgical technic. Not until more resectable cases are seen by the surgeon will cures of this dread disease become common. It is clear, therefore, that the essence of the problem of gastric cancer is that of early diagnosis.

One should therefore examine the available methods that make diagnosis possible to determine wherein these methods contribute to the timely discovery of cancer of the stomach.

1. *The History and Physical Examination.*—The histories and physical findings presented by this group of patients were in 84.5 per cent of the cases those of inoperable gastric cancer. The typical picture with upper abdominal pain or discomfort, progressive anorexia and loss of weight, vomiting, anemia and weakness was sufficiently striking in most of the cases

TABLE 1.—*Duration of Life, in Months*

| | |
|---|---|
| Not operated on | 4.8 |
| Exploratory laparotomy | 6.5 |
| Palliative gastroenterostomy | 11.0 |
| Palliative gastric resection | 9.3 |

to be recognized by the uninitiated. If the patient seeks medical advice only after this stage has been reached, in the majority of cases he is merely delegating to his physician the unpleasant task of terminal care, a task for which the philosopher or the minister of God may be as well suited as the student of medicine. The tragic drama of inoperable gastric cancer confirms in the minds of the patient, his friends and his relatives a horror of cancer in general and further frustrates his physician. It is relatively unimportant to the patient that the clinical picture of inoperable gastric cancer be recognized. In fact, most of the clinical experience with gastric cancer is futile unless it teaches doctors how to diagnose the disease earlier.

There seems little hope that the casual, superficial history will discover gastric cancer in the operable stages. Mullen [2] has aptly stated that "physicians might be divided into two classes: (1) those who are eternally suspicious of gastric cancer and never find it; (2) those who are never suspicious of it and eternally miss it. The first are apt to complain of the futility of their efforts, and the second to comment on the hopelessness of the disease." Certainly care, healthy optimism and suspicion are as essential to the gastric diagnostician as are hands to the surgeon.

The early symptoms of gastric cancer can be summarized in the two indefinite terms frequently used by the layman—"dyspepsia" and "indigestion." Reduced to medical terminology these symptoms are as follows:

(*a*) Loss of appetite is one of the earliest and commonest symptoms. At first the patient notes that heavy

1. This is not the only series in which the end results have been unusual. Pack and Livingston (End Results in the Treatment of Gastric Cancer, New York, Paul B. Hoeber, Inc., 1939, p. 127) collected about four thousand gastric resections done for cancer in which the three year survivals averaged 34.6 per cent, the five year survivals 26.8 per cent and the ten year cures, when reported, 19.66 per cent, i. e. roughly one third living at three years, one fourth living at five years and one fifth living at ten years. These averages include five year survivals of 39.5 per cent reported by Gatewood, 33.3 per cent reported by Harms and 28 per cent reported by Balfour.

2. Mullen, T. F.: Some Factors Influencing the Curability of Cancer of the Stomach, Surg., Gynec. & Obst. **72**: 298 (Feb., no. 2A) 1941.

foods he has previously eaten and enjoyed cause some upper abdominal discomfort, fulness or gas. He soon loses desire for these foods and eliminates them from his diet. In time he finds that other foods disagree with him, and he suffers from true anorexia. This frequently progresses to an abhorrence of all food—at which time the growth has usually gone too far for surgical removal.

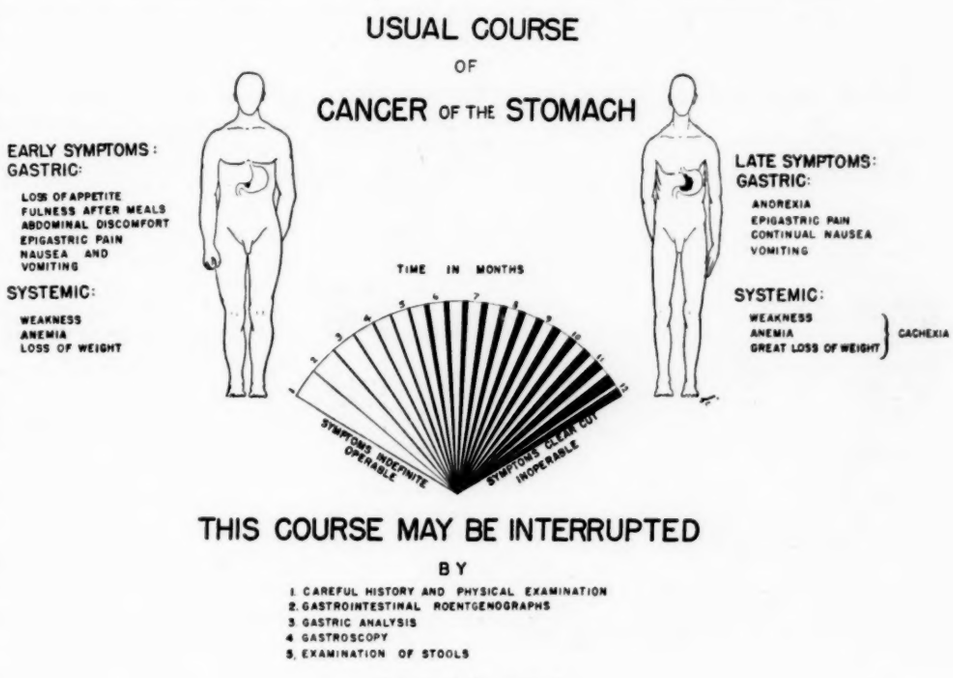
(*b*) Fulness after meals often precedes by weeks or months the development of upper abdominal discomfort or pain. The appetite is satisfied more easily than usual, and the patient does not enjoy his favorite dish, which is often an indigestible concoction.

(*c*) The fulness disappears when less is eaten and the old favorites are eliminated from the diet but in time progresses into upper abdominal discomfort after meals, which in turn may develop into pain.

(*d*) Epigastric pain is not always present and in itself is more typical of ulcer than of cancer; this is particularly true if it is intermittent and responds to food and alkalis. In carcinomatous ulcers, however, pain may be present from the outset and may exactly simulate ulcer pain. Mild pain without periodicity may occur both early and late in the disease.

(*e*) Gas and belching are frequently associated with the symptoms listed or they may occur alone as the first symptoms of gastric cancer. If the gas tastes foul to the patient an advanced necrotic tumor is usually present.

(*f*) Nausea, particularly after eating, is often present early, though advanced cases have been observed in which this sensation has never been experienced. The nausea may occur alone or may be associated with vomiting.




Cancer of the stomach.

(*g*) Vomiting, if persistent and severe, is more often a late than an early symptom. Occasional unexplained attacks of nausea and vomiting followed by complete relief are frequently the first symptoms of gastric cancer. The patient invariably refers such an attack to a dietary indiscretion. If the emesis contains changed blood, the disease is likely to be advanced.

The symptoms enumerated attract the attention of both the patient and the physician to a gastric disorder. However, all these symptoms may be entirely absent and the physician may have some difficulty in knowing to which system he should attribute the nonspecific symptoms that follow.

(*h*) Weakness, lack of vigor and strength, or of the usual sense of well-being, may be the first manifestations of gastric cancer. Though usually related to either loss of weight or anemia, they may occur alone as the earliest symptoms.

(*i*) Anemia, often associated with weakness and pallor, is sometimes the first sign of the disease but is more characteristic of advanced gastric cancer. The typical picture of pernicious anemia is unusual but is seen often enough to warrant a complete investigation of the stomach before liver therapy is started. In view of the disproportionately high incidence of gastric cancer in patients with proved pernicious anemia, and of the possible relation of atrophic gastritis to cancer of the stomach, it is imperative that patients known to have either pernicious anemia or atrophy of the gastric mucosa be thoroughly reinvestigated every six months as long as they live, regardless of their response to liver or other therapy.

(*j*) Loss of weight, while characteristic of advanced disease, may occur alone or associated with the other nonspecific symptoms, as the first sign of the disorder. This is particularly true of patients lacking sensitivity to symptoms in general.

Abnormal physical findings are usually entirely absent in early gastric cancer. Slight epigastric tenderness or resistance may be elicited on examination; this is especially common in cancer that simulates ulcer.

A fixed epigastric mass is usually advanced and inoperable, but a movable mass may be a bulky adenocarcinoma which can be resected with a fairly favorable prognosis in spite of the terminal signs of disease. Because of this type of cancer, a movable lesion should be explored before it is declared to be inoperable, regardless of its size.

Though a careful physical examination is essential, it is the history which is of greater importance in the discovery of early cancer. Only by carefully planned questioning regarding former dietary habits to contrast with the present reactions to food can the physician form a picture on which to base his diagnosis.

It is often stated that cancer does not develop in a normal stomach. This is most apparent in the 25 per cent of patients who for many years have suffered from mild gastric symptoms some or all of which simulate the early symptoms of gastric cancer. Clinical diagnosis is particularly difficult in this group, for the changes in the reactions of these patients to food may be extremely subtle.

The average duration of symptoms before the patients entered the hospital in this series was twelve and one-half months. Strangely, the duration of symptoms of the 41 patients with resectable cancer was sixteen months, three and one-half months above the average. Difficulty was encountered in attempting to place the responsibility for the delay of more than one year between the onset of symptoms and the establishment of a positive diagnosis, for the hospital records frequently omit detailed accounts of the medical experiences of patients before entering the hospital. In 88 case histories these data were recorded. As one might anticipate, analysis shows that both the patient and the private physician contributed to the delay. The average delay on the part of the patient in seeking medical aid was eight months, while the average delay on the part of the private practitioner in establishing the diagnosis was four and a half months.

A more accurate and dramatic study of the responsibility for delay in the diagnosis can be made by examining the records of the outpatient department. In spite of readily available diagnostic aids, in a number of instances there was a delay of six months or more in establishing the diagnosis. Responsibility for this delay

TABLE 2.—*Reports of Roentgen Examinations*

| | Examination | | | | | Final Diagnosis | |
|---|---|---|---|---|---|---|---|
| | 1st | 2d | 3d | 4th | 5th | | |
| Positive reading of cancer of stomach | 70.7% | 83.0% | 84.7% | 86.0% | 86.0% | 86.0% | |
| Questionable, suspicious of cancer or repeat examination requested | 11.8% | | | | | 3.1% | 33 cases* |
| Diagnosed as other pathologic condition, i. e. ulcer, gastritis, spasm, or benign lesion | 13.1% | | | | | 8.7% | |
| Normal stomach | 4.4% | | | | | 2.2% | |
| Total cases examined 229 | | | | | | | |

* In the group of 33 cases in which repeated roentgen examinations failed to clarify the final diagnosis, 29 patients had gastric acid studies, the results of which are shown in table 3.

is squarely on the shoulders of the outpatient department and emphasizes the inadequacies of the present attack on the disease.

It is apparent, therefore, that the history and physical examination, though primarily essential, fail to establish the diagnosis in many instances and, as applied by both the general practitioners and the physicians of the clinic, allow for a delay of one to six months in bringing the patient to surgical treatment.

Unfortunately the vagueness of the early complaints and the obscurity of the physical findings more often than not render early clinical diagnosis difficult, if not impossible. The profession, therefore, has come to rely on various special examinations to compensate for the inaccuracies of the usual clinical methods. Procrastination on the part of the physician in delaying further investigation until the symptoms become well established accounts for a good portion of the inoperable gastric cancer seen at the New York Hospital.

2. *The Roentgenographic Examination.* — Certainly the most useful of the diagnostic aids in cancer of the stomach is the roentgenographic examination. Without fluoroscopic and roentgen studies it is impossible to advise patients properly regarding their gastric complaints. But just how accurate is this examination in the diagnosis of gastric cancer, and is it to be relied on to diagnose cancer of the stomach early? The existent impression is that the roentgenologist is extremely accurate in both the discovery and the differential diagnosis of gastric lesions. Comfort and Butsch [3] found the roentgen diagnosis to be correct in 78 per cent of gastric lesions of less than 4.4 cm. in diameter, while 12 per cent of the diagnoses were equivocal and 10 per cent were wrong. In diagnosing benign gastric ulcers they were 93 per cent correct; in diagnosing malignant gastric ulcers they were 70 per cent correct. The general impression is that the roentgenologist is about 90 per cent accurate in the diagnosis of cancer of the stomach.

In critically analyzing the roentgenographic reports on my group of cases it is found that the accuracy approaches the commonly accepted 90 per cent when repeated examinations are possible. The reports of these examinations which were returned to the clinicians are shown in table 2.

It is apparent from table 2 that the roentgenologist is certain of only 70.7 per cent of the cases on the first examination but that with repeated examinations the accuracy goes up to 86 per cent. If one adds the 3.1 per cent still suggestive of cancer with repeated examinations, the accuracy is 89.1 per cent. In the last analysis only 2.2 per cent of this entire group were said to have normal stomachs; i. e., 97.8 per cent were said to have some type of pathologic lesion.

Since it is most important for the clinician to be acutely aware of the diagnostic limitations of gastric roentgenograms it is essential that he bear in mind the 30 per cent suggestive, benign or negative diagnoses returned after the first examination rather than the remarkable 97.8 per cent final accuracy in detecting disease. It is also important for the clinician to remember that this accuracy in roentgenologic diagnosis was obtained in a group of cases in which 84.5 per cent were inoperable. It is likely that the roentgen examination would be much less accurate in a group of cases with higher operability. In this series the roentgenologist diagnosed cancer in 80 per cent of the 41 resectable cases. Intelligent correlation of the clinical history with the roentgenologic report is of paramount importance in establishing a diagnosis of gastric cancer. A carefully taken history compatible with cancer of the stomach should probably never be overruled by a single negative roentgen report. Further study is usually indicated.

3. *The Gastric Analysis.*—Considerable confusion exists regarding the value of the gastric acidity as a diagnostic aid in cancer of the stomach. There is little question that much of this confusion has arisen through the use of a variety of technics and the inaccurate performance of the test. In measuring the gastric acidity it is important to remember that one wishes to know how much acid the stomach is capable of producing. To obtain a maximum response it is necessary to use histamine as a secretagogue; to measure this response it is necessary continuously to aspirate the gastric juice (and gastric juice only). Errors in the test creep in through the aspiration of bile, the swallowing of saliva and failure to aspirate continuously. Using the technic described by Bloomfield and Polland,[4] Holman [5] has carefully studied the gastric acidity in

3. Comfort, M. W., and Butsch, W. L.: Differential Diagnosis of Benign and Malignant Small Lesions of Stomach, Am. J. Surg. **35**: 515 (March) 1937.

4. Bloomfield, A. L., and Polland, W. S.: The Diagnostic Value of Studies of Gastric Secretion, J. A. M. A. **92**: 1508 (May 4) 1929.

5. Holman, Cranston: The Diagnosis of Gastric Carcinoma and Peptic Ulcer, J. A. M. A. **108**: 1383 (April 24) 1937.

the New York Hospital series. He found the acid below normal or absent in 85 per cent of the cases of gastric cancer and to date has found no example of hypoacidity in gastric ulcer. In this clinic, therefore, the gastric analysis has been found a useful aid in the diagnosis of cancer of the stomach. Its chief value lies in differentiating benign and malignant lesions. Though fallible in 15 per cent of the cases, it adds confirmatory evidence in 85 per cent of cases of gastric cancer. In the absence of a gastric lesion, the diagnostic value of the gastric analysis has not yet been determined. An effort is being made to determine its value by doing the test on all patients with gastric symptoms. Diagnostic aids are so urgently needed in cancer of the stomach that a complete study should be employed in all patients suspected of having the disease.

The reduced or absent free hydrochloric acid in 19 of the 29 cases supported the diagnosis of gastric cancer, leaving but 10 cases (3.7 per cent) out of the entire series in which neither roentgen examination nor determination of the gastric acidity tended to confirm the clinical picture which made these studies necessary. On scrutiny it is found that 9 of these 10 cases were diagnosed by the roentgenologist as gastric ulcer. This simply confirms the experience of most observers that it is difficult to differentiate with certainty the benign from the malignant ulcer.

The questionable lesions that the gastric analysis fails to place in the malignant group present a real diagnostic problem. Yet this problem is simplified if one considers surgery as indicated in any gastric ulcer that fails to heal under conservative treatment. If the ulcer is chronic and has recurred repeatedly under adequate treatment over a period of years, gastric resection usually is indicated whether the lesion is benign or malignant. The recent gastric ulcer with a short history may be given a two week period of conservative care in the hospital. If the roentgenograms fail to show a marked diminution in size or if the clinical symptoms are not alleviated, resection again should be considered. It is not safe, however, to regard reduction in size or the disappearance of symptoms as proof of the benignity of a gastric lesion, for malignant ulcers have been known to disappear on the roentgenogram and the patients commonly improve clinically on bland diets. Such cases deserve continued observation until the physician is satisfied that the healing is complete and permanent. Among all others, ulcers of the prepyloric area should be regarded with the greatest suspicion.

4. *Gastroscopy.*—The most recent addition to the diagnostic armamentarium of gastric disease is the flexible gastroscope designed by Wolfe and Schindler in 1932. While statistical data regarding its value in the diagnosis of gastric cancer are lacking, there can be no question that certain tumors missed on roentgen examination are visible through the gastroscope. If this occurs with sufficient frequency, the operability of cancer of the stomach will certainly be increased. An increase will be observed, however, only if the examination is applied to a large group of patients suspected of having gastric cancer. In the diagnostic problem of gastric cancer the real need for gastroscopic examination is in those cases in which the roentgenogram fails to establish the diagnosis. Since it is apparent that roentgen examination has limitations which increase the earlier the disease is seen, gastroscopic examination will in all probability become increasingly necessary as a diagnostic aid.

5. *The Stool Examination.*—A less specific but nonetheless useful diagnostic aid is the examination of the stools for occult blood. Any oozing or ulcerating lesion of the gastrointestinal tract will, of course, give a positive reaction. Occult blood in the stools necessitates further study to determine its origin and cause and therefore can be added to the group of symptoms considered under the history and physical examination which demand a clear explanation. Though occult blood is usually present in the stools of patients with gastric cancer, unfortunately its absence does not exclude the disease, for scirrhous carcinoma may not ooze or ulcerate.

6. *The Importance of Complete and Repeated Examinations.*—Most of the delay in diagnosis in the New York Hospital outpatient department was due to a false security derived from negative reports on one or more of the diagnostic aids. In several instances, after a negative roentgenologic examination the patient was reassured and lost contact with the clinic until some months later when the symptoms were well advanced. It is of paramount importance to carry out a complete gastric investigation on every patient over 35 years of age who has symptoms compatible with early gastric cancer. Nor is it sufficient for one to complete the investigation and, finding it negative, discharge the patient as well. The proper management of such a case demands continuous observation until all the early symptoms have disappeared. If they do not disappear, a complete reinvestigation should be done at frequent intervals until the diagnosis, whatever it may be, is established. In this method of management lies a fertile field of endeavor against cancer of the stomach. Not until these concepts are accepted and practiced by every physician who sees patients with gastric complaints will the profession be performing its function against this dread disease.

TABLE 3.—*Results of Studies on Gastric Acidity in Cases Not Diagnosed by Roentgen Examination*

| | | |
|---|---|---|
| Free acid 0° | 13 cases | 65.5% |
| Free acid below 50° | 6 cases | |
| Free acid above 50° | 10 cases | 34.5% |

## SUMMARY

The despondent outlook generally held by physicians toward cancer of the stomach is justified only by the high proportion of failures (95 per cent) experienced in the past. Analysis clearly shows that the failure is largely due to late diagnosis. It also shows that the responsibility for the delay in diagnosis is divided among the patient (eight months), the patient's physician (four and a half months) and the general hospital (one to six months). But the profession in its fatalistic outlook based on past experience should not accept these figures as irreducible. With highly dependable diagnostic aids available there is every reason to believe that their vigorous and repeated application would reduce the professional delay to the vanishing point. With proper educational steps the patient's delay could be reduced materially. The common expression of the profession "They all die anyway" reflects an unhealthy attitude of despair which must give way to an enthusiastic and vigorous attack on the disease before real progress is possible. It is firmly believed that a complete reversal of attitude toward cancer of the stomach on the part of the medical profession is long overdue.

# THE ETIOLOGIC ROLE OF CHEWING TOBACCO IN CANCER OF THE MOUTH

## REPORT OF EIGHT CASES TREATED WITH RADIATION

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It is our purpose in this paper to discuss the etiologic relationship between tobacco chewing and cancer of the mouth and to report 8 cases in which irradiation was employed. The chewing of tobacco is by no means infrequent and the paucity of reports in the literature does not reflect the incidence or importance of this practice in cancer of the mouth. The eight cases included in this communication serve to illustrate the prominent features of what appears to be a clearly defined clinical entity.[1]

The observation that cancer of the oral cavity is considerably higher in males than in females has aroused much speculation and has stimulated investigation of the irritating effects of tobacco, to which men are exposed in a greater degree.[2] A comprehensive survey of the literature led Lickint [3] to conclude without reservation that the use of tobacco is a definite carcinogenic factor. Hoffman [4] has accumulated extensive statistical data showing a causative relationship between cancer and tobacco. The role of chewing tobacco in cancer of the mouth has received some attention in various publications and in practically all of the standard textbooks. A careful survey, however, failed to disclose clearly recorded clinical data on cases in which the chewing of tobacco has been either definitely proved or strongly suspected as the etiologic factor. Abbe,[5] who wrote an indictment of tobacco in cancer, describes his experience with 100 patients who had cancer of the mouth, all of whom were habitual users of tobacco in one form or another. In this group there were 13 tobacco chewers in whom cancer of the mouth developed at the point at which the tobacco was held. There are no clinical data. Ewing [6] states that tobacco has a predominant influence on cancer of the buccal mucosa and that cancer often develops in the mouth of a tobacco chewer at the point at which the quid has been held. Martin and Pflueger,[7] in a review of cancer of the cheek, included chewing tobacco in a list of chronic irritants which are considered by them to be etiologic factors. There was, however, no elaboration on this observation.

Although careful clinical studies are lacking, there have been a long series of experimental investigations on animals in which tobacco and its derivatives have been applied in an attempt to evaluate the carcinogenic properties. Brosch [8] in 1900 was the first to produce an atypical epithelial proliferation in guinea pigs by the application of tobacco juice. Wacker and Schmincke [9] in 1911 produced proliferations of the epithelium of rabbit ears by the application of tobacco tar which had been obtained from pipes. The material was mixed with crude paraffin oil before application. Hoffman, Schreus and Zurhelle [10] in 1923 succeeded in producing only hyperkeratosis on the skin of fowls with tobacco tar. Helwig [11] in 1928 found that the ethereal extracts of tobacco tar and combustion products of tobacco distilled over a temperature of 400 to 500 C. did not contain carcinogenic substances for mice. However, tobacco tar when mixed with olive oil and applied to the epithelium of rabbit ears apparently produced an atypical proliferation. No actual malignant transformation seemed to occur. Chikamatsu [12] in 1931 painted the skin of mice and the ears of rabbits with tobacco tar and found it to be inactive in mice but observed that it caused the development of "cancroid ulceration" on rabbit ears approximately two hundred and twenty-five days after treatment was instituted. Bogen and Loomis [13] in 1932, in two series of 12 mice treated respectively with tobacco tar and gas house tar, found no epithelial proliferation with tobacco tar. In every animal treated with the mineral tar, however, definite epithelial proliferation was present. Lu [14] in 1934 applied the distillate of tobacco combination to rabbit skin and was able to produce carcinoma in 3 of 4 animals. He stated that the appearance of the lesion was hastened when large amounts of cholesterol were introduced. Schürch and Winterstein [15] in 1935 reported that they were able to produce carcinoma by applying tobacco tar to rabbit skin after the animals had received a cholesterol-rich diet. They were unable to evoke malignant epithelial proliferation in mice or rabbits which had received no excessive cholesterol. They postulated constitutional damage with the cholesterol-rich diet.

Roffo,[16] who has carried out extensive experiments on rabbits, used several distillation products of tobacco, a watery distillate (100 to 120 C.), a thick liquid (120 to 350 C.) and the residue. The products were applied daily to the ears of three series of 20 rabbits for a period of ten months. In no animal treated with the watery distillate did a tumor develop but in 95 per cent of the rabbits treated with the thick liquid and in 70 per cent of those treated with the residue a squamous carcinoma developed. These figures would indicate that the tobacco tar contained a powerful carcinogenic substance. Roffo has stated that the carcinogenic agent present in tar is spectroscopically identical with cancer-

From the Chicago Tumor Institute.

1. Dr. Max Cutler suggested this study and advised the authors in the preparation of the clinical material.

2. Comby, J.: Tobacco et cancer; alerte aux fumeurs! Progrès méd., June 6, 1937, pp. 996-1000. McNally, W. D.: The Tar in Cigaret Smoke and Its Possible Effects, Am. J. Cancer **16:** 1502-1514 (Nov.) 1932.

3. Lickint, F.: Tabak und Tabakrauch als "ätiologischer Faktor des Carcinoms," Ztschr. f. Krebsforsch. **30:** 349-365, 1929.

4. Hoffman, F. L.: Cancer and Smoking Habits, Ann. Surg. **93:** 50-67 (Jan.) 1931.

5. Abbe, Robert: Cancer of the Mouth: The Case Against Tobacco, New York M. J. **102:** 1-2 (July 3) 1915.

6. Ewing, James: Neoplastic Diseases, ed. 3., Philadelphia, W. B. Saunders Company, 1928.

7. Martin, H. E., and Pflueger, O. H.: Cancer of the Cheek (Buccal Mucosa) Arch. Surg. **30:** 731-747 (May) 1935.

8. Brosch, Anton: Theoretische und experimentelle Untersuchungen zur Pathogenesis und Histogenesis der malignen Geschwülste, Virchows Arch. f. path. Anat. **162:** 32-85, 1900.

9. Wacker, L., and Schmincke, A.: Experimentelle Untersuchungen zur kausalen Genese atypischer Epithelwucherungen, München. med. Wchnschr. **58:** 1607 and 1681, 1911.

10. Hoffman, Erich; Schreus, H. L., and Zurhelle, E.: Beobachtungen zur experimentellen Geschwülsterzeugung durch Teer verschiedener Herkunft und Paraffin, Deutsche med. Wchnschr. **1:** 633-634 (May 18) 1923.

11. Helwig, F. C.: Growth-Producing Effects of Extracts of Tobacco on Mice, J. A. M. A. **91:** 150-151 (July 21) 1928.

12. Chikamatsu, T., cited by Sugiura.[18]

13. Bogen, Emil, and Loomis, Russell: Tobacco Tar: An Experimental Investigation of Its Alleged Carcinogenic Action, Am. J. Cancer **16:** 1515-1521 (Nov.) 1932.

14. Lu, F. H.: Ueber die Erzeugung von Krebs durch Tabakteerpinselung beim Kaninchen, Frankfurt. Ztschr. f. Path. **46:** 513-522, 1934; Ueber die Erzeugung von Krebs durch Tabakteerpinselung bei Kaninchen; Ueber das solitarauftreten einzelner Tumoren auf einer diffus gereizten Körperstelle, ibid. **47:** 52-62, 1934.

15. Schürch, Otto, and Winterstein, Alfred: Experimentelle Untersuchungen zur Frage Tabak und Krebs, Ztschr. f. Krebsforsch. **42:** 76-92, 1935; Experimentelle Untersuchungen zur Frage Tabak und Krebs, ibid. **46:** 413-419, 1937.

16. Roffo, A. H.: Durch Tabak beim Kaninchen entwickeltes Carcinom. Ztschr. f. Krebsforsch. **33:** 321-332, 1931; Der Tabak als krebserzeugendes Agens, Deutsche med. Wchnschr. **63:** 1267-1271 (Aug. 13); Krebserzeugenden Einheit der verschiedenen Tabakteere, ibid. **65:** 963-967 (June 16) 1939.

producing hydrocarbons related to the benzanthracene group. This is somewhat difficult to reconcile with the observations of Kennaway,[17] who has shown that the carcinogenic substances of coal tar are not found in appreciable quantities below 500 C. Recently Sugiura [18] presented evidence to show that tobacco tar was only weakly carcinogenic and, in contradistinction to Roffo's claim, could produce only 1 squamous carcinoma in 168 mice and no squamous proliferation in 22 rabbits. The manner of the distillation and the manner of application were approximately the same. It is possible, however, that the divergent results may be due to the use of different strains of animals by the investigators.

The exact nature of the carcinogenic substance contained in tobacco tar is not clear, and wide discrepancies exist in the observations of various workers. It cannot be denied, however, that tobacco tar may be considered at least weakly carcinogenic.

With respect to the clinical features of the constant use of an irritant in the oral cavity, a similar picture presents itself in the case of betel or buyo [19] chewing. Betel chewing is a common practice among the natives of the Orient, and a review of the recent literature discloses an unusually high incidence of cancer of the mouth where the practice is prevalent. The ingredients of the betel chew, as described by various authors, consist essentially of the betel leaf, the areca nut, lime (shell or stone) and tobacco. It became increasingly evident as more reports were surveyed that tobacco is frequently used as an ingredient in the several varieties of the betel chew and, as will be shown later, may possibly represent the most important carcinogenic factor.

Ellis,[20] reporting on betel chewing in Siam, quotes the results of a questionnaire which was sent to physicians scattered throughout Siam. To the query "Have your observations led you to believe that betel-nut chewing is irritating and tends toward the production of cancer of the mouth?" thirteen of the sixteen answered in the negative. However, the opinion of one of the three constituting the minority reflected a survey of the Chulalongkorn Hospital statistics, which were the most detailed and significant of all. Fells,[21] in a two year survey of experiences in southern India, reported 377 cases of epithelial cancer, 91.5 per cent of which were in the mouth. Bentall [22] reported 1,700 cases in southern India, of which 71 per cent were in the mouth. Both authors pointed out the frequency of betel chewing in India and suggested this as a possible etiologic factor. It appears to be the opinion of those who have access to reasonably accurate statistics that the practice of betel chewing is closely associated with the development of cancer of the mouth. No real attempt, however, has been made to isolate the important carcinogenic agent or agents in the betel chew.

A review by Orr [23] on the carcinogenic effect of the betel chew presents presumptive evidence that the agent is contained in the tobacco and in its combination with lime. He points out, in a wide geographic survey, that although betel chewing is common throughout India the incidence of cancer of the mouth is much more prevalent in southern India and is common only on the southwest coast. In analyzing the important difference in the geographic distribution of oral cancer, he concluded that the difference in the carcinogenic effect of the chew was due to the use, in southern India, of cheap, irritating tobacco with shell lime (a stronger alkali than stone lime) and a prolonged retention of the quid. Difference in the vitamin content of the diets in the various regions was suggested as another possible contributing factor. On reports from the Bihar district, Orr found that the Hindus, who chew betel continuously, have a low incidence of carcinoma, but the Santals, an aboriginal tribe, who are heavy tobacco and lime chewers, using no betel or areca nut, have a high incidence of oral cancer. Maxwell,[24] describing his experience in Formosa, stated that he rarely saw cancer of the mouth in the locality in which he was stationed, although betel chewing was extremely prevalent. It is interesting to note, however, that in his description of the chew he significantly failed to mention the use of tobacco. Spittel [25] and Davidson [26] also pointed out the possible significance of tobacco in the betel chew. Wells,[27] in a report on betel chewing and its effect on the teeth, stated that in the many patients he examined he saw not a single instance of carcinoma of the mouth. In describing the betel chew he failed to mention the use of tobacco.

Fig. 1.—Typical microscopic structure of tobacco cancer.

Since statistical data in countries in which betel chewing is common are very meager or lacking entirely, it is difficult to ascertain the exact incidence of betel cancer or to single out the ingredients in the chew which have the most important carcinogenic effects.

17. Kennaway, E. L.: Cancer-Producing Tars and Tar-Fractions, J. Indust. Hyg. **5**: 462-488 (April) 1924.

18. Sugiura, Kanematsu: Observations on Animals Painted with Tobacco Tar, Am. J. Cancer **37**: 41-49 (Jan.) 1940.

19. Buyo chewing in the Philippines has been described by Davis (Buyo Cheek Cancer, J. A. M. A. **64**: 711-718 [Feb. 27] 1915) as an etiologic factor in cancer of the mouth. On careful review of this communication it is evident that the buyo chew and the betel chew are identical. Apparently the betel leaf is sometimes called the buyo leaf in the Philippine Islands.

20. Ellis, A. G.: Betelnut Chewing and Its Effects, Including Cancer of the Mouth, Arch. Int. Med. **28**: 252-267, (Sept.) 1921.

21. Fells, A.: Cancer of the Mouth in Southern India, with an Analysis of Two Hundred and Nine Operations, Brit. M. J. **1**: 1357-1358, 1908.

22. Bentall, W. G.: Cancer in Travancore, South India, Brit. M. J. **2**: 1428-1431, 1908.

23. Orr, I. M.: Oral Cancer in Betel Nut Chewers in Travancore: Its Aetiology, Pathology and Treatment, Lancet **2**: 575-580 (Sept. 9) 1933.

24. Maxwell, J. L.: Betel Chewing and Cancer, Brit. M. J. **1**: 729 (April 19) 1924.

25. Spittel, R. L.: Betel Chewing and Cancer, Brit. M. J. **2**: 632 (Oct. 6) 1923; **1**: 158 (Jan. 26) 1924.

26. Davidson, J.: Betel Chewing and Cancer, Brit. M. J. **2**: 733-734 (Oct. 20) 1923.

27. Wells, C. R.: Betelnut Chewing and Its Effects, U. S. Nav. M. Bull. **22**: 437-439 (April) 1925.

The available evidence, however, points to the tobacco as being an important carcinogenic factor. This conception would fit the available data and serves to eradicate apparent discrepancies.

Eight cases of carcinoma of the mouth are presented in which a definite history of tobacco chewing has been

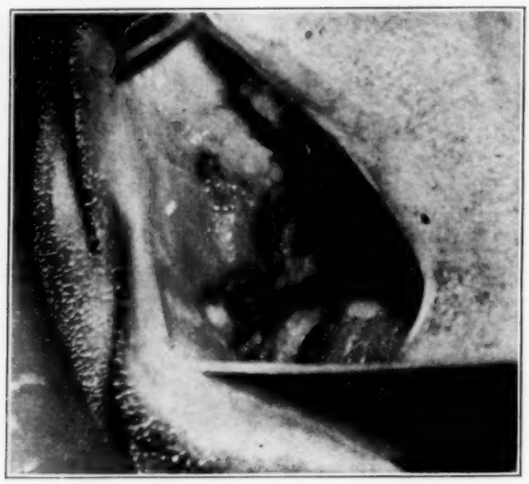

Fig. 2 (case 4).—Carcinoma of the inner surface of the right cheek before therapy.

elicited. This series was collected over a two year period, during which time 85 cases of various types of carcinoma of the mouth and tongue were observed. The average age of the 8 patients was 69 years—all were over 60. The practice of chewing tobacco extended over a period of fifty years on the average and the quid was chewed daily for lengths of time varying from two to ten hours. The first symptom referable to the lesion was usually soreness, and as the lesion progressed it became more painful and interfered with mastication. In these cases the points of origin correspond exactly to the areas in which the quid was held. The sites of development of the lesions were the mucous membrane of the cheek (6 cases) and the mucous membrane of the alveolar ridge (2 cases). In addition to the actual neoplasm there were widespread areas of leukoplakia surrounding the tumor and partially covering its surface; the leukoplakia was, in all probability, a precursor of the actual new growth. In this respect it is interesting to note that in two cases the usual position of the quid was changed because of developing irritation and soreness, and areas of leukoplakia subsequently appeared at the new site.

The appearance of the tumors on the inner surface of the cheek is distinctive and almost pathognomonic. All presented sharply circumscribed margins, raised several millimeters to a centimeter above the normal mucosa. The surface had a papillary verrucoid character and was covered and surrounded by patchy areas of leukoplakia. The lesions may be extensive, occupying the whole of the inner surface of the cheek from the lower to the upper alveolar margin (fig. 2). The tumors which began on the mucous membrane of the alveolar ridges had fewer distinguishing features and represented the ordinary type of ulcerating carcinoma. They were long narrow lesions extending along the alveolar margins and were associated with extensive leukoplakia (fig. 3). In most of the cases there was a moderate degree of induration along the margins of the tumors, but extensive infiltration into the submucosal tissues was not present. The lesions developed slowly, 1 patient having had symptoms for eleven years and 2 others for more than three years. They were slow to invade the neighboring lymphatics, and only 1 of the 8 patients had definite metastasis to the cervical nodes. Patient 7 had an enlargement of a node in the upper portion of the anterior cervical lymph chain which was considered not to be involved by carcinoma clinically. All tumors from which a biopsy was made disclosed epidermoid carcinoma. They were well differentiated and in none of them could a considerable degree of anaplasia be demonstrated. The lesions responded well to radiation therapy and showed prompt regression. It is noted, however, that large doses were required for complete disappearance. The type of radiation therapy will be outlined with the description of the cases:

## REPORT OF CASES

CASE 1.—A white man aged 64, admitted July 18, 1938, had chewed tobacco daily for twelve years. He held the quid in his mouth for periods of two to three hours at a time. The quid had always been held on the left side at a point corresponding to the site of the lesion. He had always been a heavy smoker, using cigars and a pipe for the past twenty-five years. Upper and lower plates have been worn for twenty-five years, but these did not appear to have caused him any trouble. The first symptom was soreness, which appeared one year prior to admission. The soreness became progressive and he could feel a roughened area on the inner surface of the left cheek shortly before admission. The Wassermann reaction was negative.

On the inner surface of the cheek, adjacent to the lower alveolar ridge, there was present a small oval papillary tumor which did not appear to infiltrate the submucosal tissues. The surface of the tumor was the seat of multiple projections, and areas of leukoplakia surrounded and covered portions of the lesion. Adenopathy was not noted. Histologic section disclosed papillary epidermoid carcinoma with pearl formation. Roentgen therapy was administered, the patient receiving 6,250 roentgens measured on the skin to one field. The surface area

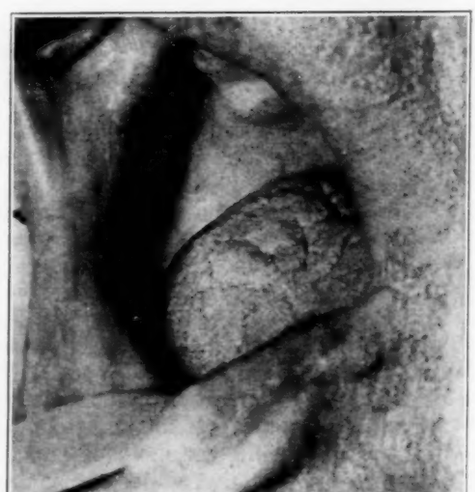

Fig. 3 (case 4).—Appearance of inner surface of the right cheek, after therapy.

averaged about 30 sq. cm. The dose was administered in twenty-three days. The technical factors consisted of 220 kilovolt peak, 5 mm. of copper plus 1 mm. of aluminum filtration, focal skin distance 60 cm. Epithelitis and moist epidermitis was produced which healed in the usual manner. The patient is living and well with no evidence of disease.

CASE 2.—A white man aged 69, admitted Dec. 18, 1939, had been an inveterate tobacco chewer for the past fifty years

and had chewed daily for hours at a time. He used no cigarets and smoked cigars only occasionally. He had no dentures or bridgework although he was completely edentulous. It is difficult to ascertain whether he continuously held the quid on the left side of the mouth, corresponding to the site of the lesion. However, the quid was held on this side of the mouth most of the time. The first symptom was "sore mouth"

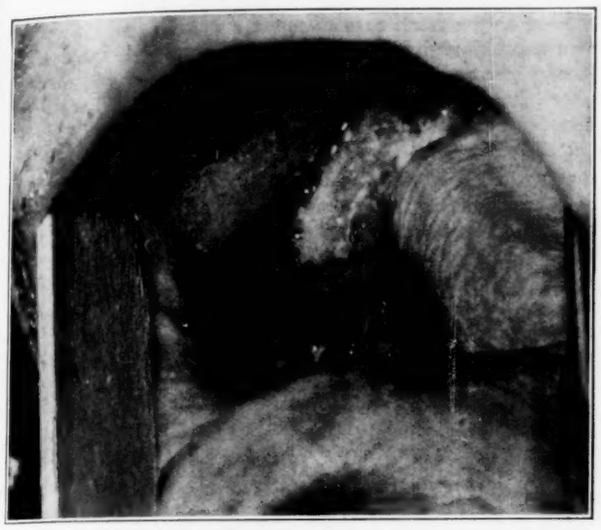

Fig. 4 (case 5).—Carcinoma of the mucous membrane of the right alveolar ridge before therapy. Note tobacco quid in apposition with the ulcerated portion of the lesion.

three years prior to admission, and at that time a physician prescribed local applications. About five months prior to admission he consulted another physician because of the progressive soreness and pain, and radium and roentgen therapy were administered. The pertinent complaints when he was first seen were referable to the masses in the neck which had developed three months previously.

Extensive leukoplakia on the mucous membrane of the left cheek with superimposed superficial ulceration was present. There was no evidence of carcinoma of the mouth but histologic sections made before treatment with radium and roentgen rays revealed definite squamous cell carcinoma. He had extensive bilateral cervical adenopathy, the largest node measuring 5 cm. in diameter on the left side and 3.5 cm. in diameter on the right side. No further therapy was deemed advisable because of the extent of the disease, and he was referred back to his physician. He died several months later with metastatic carcinoma.

CASE 3.—A white man aged 65, admitted Dec. 20, 1939, had symptoms referable to the lesion in his mouth about nine months prior to admission. The first symptom was pain, which became progressively worse. He consulted a physician several months after the onset and was treated with local applications. The lesion failed to improve and a biopsy was done. The patient had chewed tobacco daily for approximately thirty-five years. The quid had rested almost always on the side of the mouth corresponding to the site of the lesion. He had had dentures for the lower jaw for the past five or six years. He lost about 40 pounds (18 Kg.) in one year.

There was an ulcerated lesion on the left lower alveolar ridge. The ulceration was 1 cm. wide and about 4 to 5 cm. in length, extended to the anterior pillar and involved the mucous membrane of the left cheek. Patchy areas of leukoplakia were present at the edges of the lesion. Cervical adenopathy was not noted. Histologic sections demonstrated epidermoid carcinoma.

The patient received teleradium therapy with the 10 Gm. pack. He was given 156,000 milligram hours in a period of thirty-six days through an 8 cm. portal at a distance of 12.5 cm. The radium was filtered with the equivalent of 2 mm. of platinum. The lesion at first responded poorly, and immediately after the teleradiation a local applicator in the form of a vulcanite mold was inserted. Three thousand milligram hours was given in five days. The radiation surface of the mold was about 14 sq. cm. The mold contained 160 mg. of radium with a filtration of 1 mm. of platinum. Following therapy extensive epithelitis developed involving the entire lesion and the surrounding mucous membrane. The skin showed only a small area of moist epidermitis. The skin and mucous membrane healed in normal fashion. One month after completion of therapy the patient was free from disease. He died three months later of coronary thrombosis with no evidence of carcinoma.

CASE 4.—A white man aged 72, admitted Jan. 12, 1940, had been chewing tobacco daily for the past sixty years. He stated that he had chewed constantly throughout the day. Until several years ago he always held the quid on the right side at the point at which the lesion developed. Recently, however, because of pain and irritation, he shifted the quid to the left side. About eleven years previously he had consulted a physician because of soreness and roughness of the buccal mucosa on the right side. At that time his teeth were removed and a small nodule of the cheek was cauterized. This never healed completely, but the lesion did not increase in size until six months prior to admission.

There was an obvious tumefaction in the right cheek and a heaped-up papillary verrucoid tumor mass occupying almost the entire mucosa of the cheek and extending anteriorly to within 1 cm. of the labial commissure was present. The lesion measured approximately 3 cm. vertically, 4 cm. in the anteroposterior direction and about 1 cm. in thickness. The lesion was covered and surrounded by patchy areas of leukoplakia. Adenopathy could not be demonstrated. Roentgenograms of the mandible and maxilla revealed no evidence of bone invasion. On the mucous membrane of the left cheek, corresponding to the new site at which the quid was held, a small patch of leukoplakia 1.5 cm. in diameter had developed. Histologic section of the tumor on the right cheek revealed epidermoid carcinoma.

The patient was treated with the 10 Gm. radium pack. He received 152,000 milligram hours through a 6 by 6 cm. portal at a distance of 12.5 cm. in a period of eighteen days. The radium was filtered with the equivalent of 2 mm. of platinum.

Fig. 5 (case 5).—Appearance after therapy.

The lesion did not completely disappear, and a nodule measuring about 1 cm. in diameter remained. Interstitial application of radium was used about three months after the teleradium therapy. He was given 1,200 milligram hours in a period of one hundred and twenty hours. Five 2 mg. needles filtered with 1 mm. of platinum were inserted underneath the remnant. The needles were arranged parallel to one another in a flat radiating surface, measuring approximately 3 by 4 cm. At the present time the patient is free of disease.

CASE 5.—A white man aged 70, admitted April 15, 1940, had chewed tobacco daily for almost sixty years. The quid had been held almost entirely on the left side for about two hours each day. The first symptom, observed three months prior to his admission, was pain, intensified by mastication. The Wassermann reaction was negative.

Fig. 6 (case 6).—Carcinoma of the inner surface of the right cheek before therapy.

There was present an extensive lesion between the alveolar ridge and the mucous membrane of the cheek on the right side, measuring approximately 7 cm. in length. The lesion was surrounded by an extensive area of leukoplakia. There was ulceration in the center and considerable induration at the edges. Involvement of the mandible was not present on roentgen examination. A specimen for biopsy was not taken. There was no cervical adenopathy.

The patient was treated with teleradium therapy. He was given 156,000 milligram hours with the 10 Gm. radium pack in eighteen days through an 8 cm. round portal at a distance of 12.5 cm. The radium was filtered with the equivalent of 2 mm. of platinum. Additional therapy was administered two weeks after completion of teleradium therapy in the form of a mold. The radiation surface of the mold was approximately 5.5 sq. cm. He received a total of 1,370 milligram hours in seven days of treatment extending over a period of nine days. The mold contained 50 mg. of radium. The radiation surface was 7 mm. from the lesion. The radium was filtered with 1 mm. of platinum. Intense epithelitis was produced, which healed normally. There is now no evidence of cancer.

CASE 6.—A white man aged 70, admitted July 2, 1940, stated that he had had an elevated area on the mucous membrane of the right cheek for the past six months. The first symptom that he observed was soreness. He consulted a physician because the lesion was becoming larger and more painful and interfered with mastication. At first the patient stated that he did not chew tobacco but on close questioning he admitted that he had chewed it for a period of thirty years, during which time he chewed daily for from five to six hours. The quid was held on the right side almost entirely. In later years, however, the quid was shifted to the left because of soreness at the original site. He stopped the practice of chewing tobacco approximately at the age of 50, but since then he has been smoking, using both a pipe and cigars. The Wassermann reaction was negative.

There was a rounded raised papillary lesion of the mucous membrane of the right cheek measuring approximately 2.5 cm. in diameter. The mucous membrane of the right cheek was covered with thin patchy areas of leukoplakia. On the inner surface of the left cheek, opposite the second molars, a round patch of leukoplakia with a slight central depression was present. (This corresponds to the new site at which the quid was held.) There was no evidence of cervical adenopathy. Histologic section showed papillary epidermoid carcinoma.

The patient was given roentgen therapy and received 5,000 roentgens measured on the skin in a period of eleven days. Technical factors were 220 kilovolts, 60 cm. distance, portal 4 by 4 cm., filtration 2 mm. of copper plus 1 mm. of aluminum. Following radiation therapy, epithelitis of the surface of the lesion and surrounding mucous membrane developed. The skin showed only a small area of moist epidermitis which was situated approximately in the center of the treated cutaneous surface. These radiation reactions healed normally and two months after therapy was administered the lesion had completely disappeared.

CASE 7.—A white man aged 75, admitted July 30, 1940, stated that he had used chewing tobacco for the past sixty-five years almost continuously. He chewed practically all day and held the quid at a point on the left side corresponding to the site of the lesion. The first symptom developed about a year prior to admission, at which time he observed an irritation on the inner surface of the left cheek. Since then he had also had burning pain in the left side of the mouth associated with excess salivation. The Wassermann reaction was negative.

There was an irregular, ulcerated area involving the buccal mucosa anterior to the body of the mandible. The lesion measured approximately 2 by 3 cm. It was craterlike, and the edges consisted of papillary masses. The margins were firm but the lesion did not infiltrate deeply into the submucosal tissues. There was a small soft node in the upper portion of the anterior cervical lymph chain which was considered not to be involved by carcinoma. Histologic section revealed epidermoid carcinoma. The patient is under treatment with teleradium therapy at the time of this report.

CASE 8.—A white man aged 72, admitted Aug. 9, 1940, stated that he had chewed daily for periods of from four to five hours and had continued this practice for the past sixty-five years. He smoked a pipe occasionally and had worn an upper plate for about two months. Oral hygiene had been poor. The first symptoms appeared three years prior to admission, and at that time swelling of the cheek, irritation of the buccal mucosa on the right side and difficulty in mastication were present. The symptoms subsided for a time, but after this the lesion gradually became more painful. The Wassermann reaction was negative.

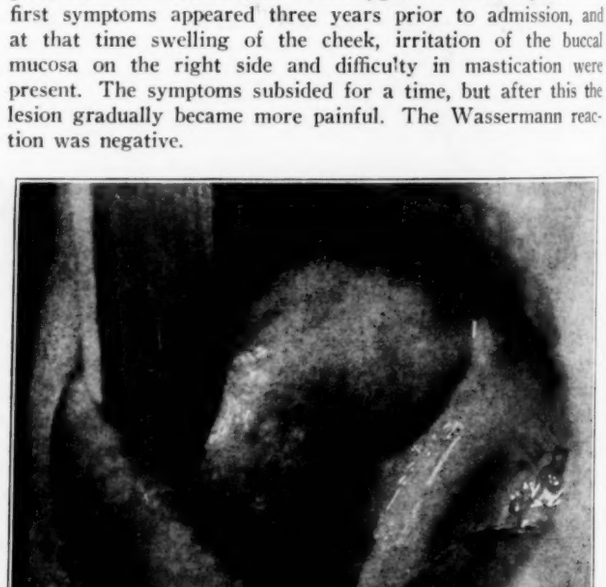

Fig. 7 (case 6).—Appearance of the inner surface of the right cheek after therapy.

There was a verrucoid lesion, approximately 4 by 5 cm. in diameter, occupying the greater portion of the mucosa of the cheek on the right side. The anterior portion was papillary and covered with patchy areas of leukoplakia, which also involved the mucous membrane surrounding the lesion. The leukoplakic areas extended to the alveolar margins above and below. There was no evidence of cervical adenopathy. The

Wassermann reaction was negative. Histologic section showed epidermoid carcinoma. The patient is receiving teleradium therapy at the present time.

SUMMARY

The data presented here, although subject to certain limitations because of their clinical character, support the concept that chewing tobacco is an etiologic factor in the development of cancer of the mouth. A study of tobacco chewing, a practice whereby the causative factor is applied to the mucous membrane, is perhaps the most direct method of demonstrating its etiologic relation to cancer. It is agreed by practically all observers that carcinoma of the mouth develops at the point at which the quid is held, and an analysis of the history and observations made in the 8 cases presented here amply corroborates such a view.

The literature on betel chewing reveals further evidence that the practice of chewing tobacco may be the dominant factor in the development of this type of cancer. Tobacco as a common ingredient in the betel chew has received some attention in this regard from others. It is to be noted that reports which fail to show a greater incidence of cancer of the mouth in betel chewers also fail to mention the use of tobacco in describing the preparation of the betel chew. It is unfortunate that details and statistical information on betel chewing and cancer are lacking in regions in which this is a common practice.

The lesions on the inner surface of the cheek associated with the use of chewing tobacco have a distinctive appearance. They are of a papillary verrucoid character, covered and surrounded by patchy areas of leukoplakia. Only moderate induration is present, and deep infiltration into the submucosal tissues is lacking. The leukoplakic changes are probably precursors of the actual neoplasm and represent the earliest changes. This is well illustrated in 2 subjects who transferred the quid from one side of the mouth to the other after the developing lesions became too painful. In both instances, small circumscribed patches of leukoplakia appeared at the new sites. The lesions are slow in growing and metastasize only late in the course of the disease. Histologically the tumors reveal no unusual features. They are all examples of differentiated epidermoid carcinoma.

The therapy which these patients have received has been radiation. Immediate response has been excellent, although large doses were required for complete regression. It is impossible to state the effectiveness of radiation with respect to cure, since these cases have been collected in the past two years. It is important to note, however, that all patients who completed treatment were freed of the primary lesion.

21 West Elm Street.

**A Great Thrill.**—To the student of medical history there is a great thrill in finding instances in which a supposedly modern invention had its origin far back in the ages. Such was the case with bimanual turning, credited to Braxton Hicks in the middle of the nineteenth century. In reality the procedure was described in detail three hundred years before by Scipio Mercurio, the Dominican monk of Padua and Venice. Mercurio quit the cloister to practice medicine in Venice in 1571, and there he published his midwife's book, in which he described his technic of version and the cesarean operation. As far as is known, he was the first to advise cesarean section on the living mother with a contracted pelvis. His writings were the outstanding contributions to obstetrics in the sixteenth and seventeenth centuries.—Findley, Palmer: A Historical Sketch of Obstetrics, *J. Internat. Coll. Surgeons,* April 1941.

# AMINO ACIDS AS A SOURCE OF NITROGEN FOR ALLERGIC INFANTS

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It is sometimes necessary to feed infants who are allergic to milk a food containing no milk. The soy bean foods have been and will continue to be of value. Their chief disadvantage is that in some infants they cause large, loose bowel movements and irritated buttocks. While such trouble is not common if the food is cooked in a double boiler for three quarters of an hour, it would be of advantage to have an alternate food for use when necessary.

Shohl, Butler, Blackfan and MacLachlan,[1] using a synthetic protein-free food [2] in which amino acids prepared from hydrolyzed casein were the chief source of nitrogen, showed that for short periods nitrogen equilibrium and good gains in weight could be maintained. This is of great theoretical interest but of less practical importance unless it can be shown that such a food is adequate for nutrition over relatively long periods.

The preparation used by me was the same as that used by the authors cited. It has the following composition: amino acids 20 per cent, dextrimaltose 42.3 per cent, virgin olive oil 18 per cent, arrowroot starch 10 per cent, brewers' yeast powder 3 per cent and mineral salts 6.7 per cent.[3]

One level tablespoon contains 38 calories. When four level tablespoons are mixed with 6 ounces (180 cc.) of water, the mixture contains amino acids 2.8 per cent, fat 2.8 per cent, carbohydrates 8.5 per cent and minerals 0.8 per cent. The food contains no vitamin A, C or D, but adequate amounts of these were given in added quantities. The earlier lots contained none of the vitamins B, so that one-half teaspoon of brewers' yeast twice a day was given to each infant receiving the food. Later 3 per cent of yeast was incorporated directly into the food during the process of manufacture, and no additional vitamin B was given.[4]

The nitrogenous compounds contained in the preparation are not allergenic, since it was found by making intracutaneous tests that a solution of the amino acid preparation containing the same amount of nitrogen as the casein solution ordinarily used for making cutaneous tests would not give positive cutaneous reactions in infants who did react positively to casein.

In this investigation it was my chief purpose to determine whether infants would take such a food over relatively long periods and, if they did take it, whether or not it would produce adequate gains in weight. The value of a milk-free diet for certain eczematous infants has been discussed by us.[5]

From the Eczema Clinic, Children's Hospital, and the Department of Pediatrics, Harvard Medical School.

1. Shohl, A. T.; Butler, A. M.; Blackfan, K. D., and MacLachlan, E.: Nitrogen Metabolism During Administration of Amino Acids of Hydrolyzed Casein, J. Pediat. **15**: 469-475 (Oct.) 1939.

2. Laboratory product 113 (now called Amigen Compound) was supplied by Mead Johnson & Co. Their Dr. Warren M. Cox stated that approximately 60 per cent of the nitrogen of the hydrolyzed casein used in this product is amino nitrogen and 12 per cent ring nitrogen, and the remainder probably presents higher molecular aggregates, such as polypeptides. In using the term "amino acids," I refer to the enzymic casein hydrolysate.

3. Including 3.5 per cent calcium gluconate.

4. The amount of yeast added by the manufacturer supplies approximately 12 international units of thiamine hydrochloride per level tablespoon of the powder.

5. Hill, L. W., and Stuart, H. C.: Soy Bean Food Preparation for Feeding Infants with Milk Idiosyncrasy, J. A. M. A. **93**: 985-987 (Sept. 28) 1929.

Thirty-six eczematous infants, all under 1 year of age, most of whom gave positive cutaneous reactions to one or more of the proteins of cow's milk, were fed on the food for periods varying from two weeks to three months. The food is taken well by most infants under 1 year of age and does not often cause vomiting or diarrhea. The stools are usually two to four a day and are of thin consistency but do not cause irritated buttocks. The results on the eczema are the same as with any other milk-free food—if the eczema is caused by milk it will be greatly relieved or cured with a milk-free diet. In about one half of the patients treated in this series the eczema was apparently definitely due to milk.

In several such cases the eczema immediately recurred when milk was resumed and disappeared again when a return was made to the milk-free food. In some cases, in spite of positive intracutaneous reactions to milk, there was no improvement whatever on withdrawal of milk. This observation is not new and simply means that not all positive intracutaneous test reactions to milk are of etiologic significance. There can be no doubt, however, that many times the withdrawal of milk and the substitution of the amino acid food causes great improvement or cure of the dermatitis.

Gain in weight is irregular in many eczematous infants irrespective of what they eat, so that it is not possible to apply exact statistical methods to the recorded data. With the amino acid food there were some large gains over short periods but no large gains over long periods. However, in many cases, although the gain in weight over a period of two or three months may not have been large, it was adequate, and babies experiencing the gain were in excellent nutritional condition. As a matter of fact, it is better for eczematous babies not to gain weight rapidly during the acute stage of the eczema, and I should consider a gain which is somewhat below the average normal as satisfactory. Any estimate of the proper gain in weight is difficult as regards eczematous infants, and many of them cannot be compared to the normal, because the infants are not well. Some infants, especially those with erythroderma, will not gain well no matter what they are fed or how much of it they eat until the acute stage of the dermatitis is over, which may take several months. Furthermore, eczematous infants are subject to infections of the skin and respiratory tract which interfere with nutrition, and some wriggle and rub so actively that they use more calories than the normal baby. In several instances I discontinued the amino acid food because the gain in weight did not seem sufficient and found that there was no better gain with milk. I found that often the usual 45 or 50 calories per pound was not enough and that I have had better results with 60. Most patients took adequate amounts of the food and gained well. It has a strong taste, somewhat like strong beef tea, and some infants, although they may take it well for a few weeks, tire of it and thereafter will not take enough to gain. This is perhaps the only real disadvantage of the food.

I know of no milk-free food that has no disadvantages, and for that reason it is desirable to have more than one. The soy bean foods are not well adapted for very young babies (under 4 months) or for those with a tendency to loose stools. I fed one infant aged 7 weeks the amino acid food, and it was well tolerated. I have the impression that it is the milk-free food of choice for very young infants.

I have known of infants who have taken a soy bean food for as long as two years. I doubt that the amino acid food would be taken for as long a period but consider it a valuable adjunct in the dietetic treatment of milk-sensitive infants.

## SUMMARY

Thirty-six infants were treated; satisfactory results were obtained in 19 and unsatisfactory results in 9. The results were inconclusive in the treatment of 8 infants.

By satisfactory results, I mean that the food was taken well by the baby, improved the eczema and caused satisfactory gains in weight. By unsatisfactory results is meant that it caused either diarrhea or vomiting, was taken either poorly or not at all or caused unsatisfactory gains in weight.

## CONCLUSIONS

1. It is possible to feed infants satisfactorily for periods of at least three months on a synthetic food which contains no protein except that contained in a small amount of added brewers' yeast and in which more than 60 per cent of the nitrogen is in the form of amino acids. This food has some advantages over other milk-free foods.

2. No milk-free food for infants at present available is entirely without disadvantages. It is desirable to have more than one type of food, in order to meet the individual needs of different babies.

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# TRANSMISSION OF A MURINE STRAIN OF POLIOMYELITIS VIRUS TO GUINEA PIGS AND RHESUS MONKEYS

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In 1910, while studying experimental poliomyelitis in monkeys, Roemer and Joseph [1] first called attention to a presumably spontaneous flaccid paralysis which occurred among approximately 5 per cent of their normal guinea pig stock. In the following year Roemer [2] succeeded in transmitting this disease to normal guinea pigs by intracerebral injection of emulsions of the brains and spinal cords of spontaneously paralyzed guinea pigs. The causative agent was identified as a hitherto unknown filter-passing virus which proved glycerin resistant and could not be grown on artificial mediums. The pathologic condition in the central nervous system was described as meningomyeloencephalitis of lymphocytic nature, involving the pia mater and also the substance of the spinal cord, particularly in the lumbar levels. While stressing the dissimilar pathologic features, Roemer did not fail to emphasize the striking analogy between this paralysis of guinea pigs and Heine-Medin disease. Identification of the etiologic agent was not carried further, probably because the virus was lost in its fifth passage in guinea pigs. Since the time of Roemer's observation laboratory workers have almost universally held that guinea pigs are

This work was supported by a grant from the Philip Hanson Hiss Jr. Memorial Fund.

From the Department of Bacteriology, Columbia University College of Physicians and Surgeons.

1. Roemer, P. H., and Joseph, K.: Noch einige Experimente zur Poliomyelitisfrage, München. med. Wchnschr. **57:** 2685, 1910.

2. Roemer, P. H.: Ueber eine der Kinderlähmung des Menschen sehr ähnliche Erkrankung des Meerschweins, Deutsche med. Wchnschr. **37:** 1209, 1911.

refractory to experimental inoculation with poliomyelitis virus. However, Neustaedter [3] in 1913 and Picard [4] in 1925 reported what they interpreted as spontaneous induction of poliomyelitis in certain guinea pigs in which flaccid paralysis of the extremities developed after close contact with poliomyelitis-infected monkeys. Neither investigator was able to extend his studies further, since the infectious agent proved nontransmissible in guinea pigs beyond one or two passages. To our knowledge no further records have been published of "spontaneous" flaccid paralysis in guinea pigs. It would therefore seem that the observations of Roemer, Neustaedter and Picard are unique in that all three referred to the occurrence of flaccid paralysis in guinea pigs under conditions in which the possibility of a transfer of poliomyelitis virus by natural routes of infection cannot be excluded with certainty.

In an earlier communication dealing with the adaptation of the SK strain of poliomyelitis virus from the monkey to rodents we [5] reported the fact that the murine virus, while highly pathogenic for cotton rats and white mice, possessed no demonstrable paralyzing power in rhesus monkeys or guinea pigs; however, active virus could be recovered from such symptomless infected animals for at least ninety-six hours after intracerebral injection. These observations were based on properties of the murine virus manifested in its earlier transfers (tenth to thirtieth passage). With continued passages in mice evidence began to accumulate of a considerable increase in virulence, intracerebral potency of the murine virus for mice gradually rising from an original titer of approximately 1 : 1 million to activity on dilution of 1 : 1 billion. This phenomenon served as a stimulus to reexamination of the pathogenicity of the murine virus, beginning with the seventieth passage in mice, for rhesus monkeys and guinea pigs.

As far as its pathogenicity for rhesus monkeys is concerned, it was found that the murine virus had undergone a minor though distinct change. Whereas formerly only slight nervous disturbances of transitory character had been observed, the virus now evoked much more definite signs of activity when introduced directly into the central nervous system. Thus, of a group of 7 monkeys inoculated intracerebrally with suspensions of the brains or cords of paralyzed mice, 3 monkeys passed through a well defined encephalitic syndrome consisting of high fever, coarse tremor and tonic-clonic convulsions, followed by extreme prostration which proved fatal in 1 instance. The described symptoms, as well as the histologic examination of the monkey which died, left no doubt that the infectious agent was capable of localizing in the brain of the monkey, with the production of acute polioencephalitis. Yet in none of these animals can classic poliomyelitis be said to have developed, if this diagnosis is to be limited to a disease process that is characterized by spinal localization of the virus, with subsequent production of flaccid paralysis. Again, the essential difference in the character of the observed process was revealed by the fact that all surviving monkeys, when reinfected four weeks later with SK monkey poliomyelitis virus, were found unprotected.

With reference to its pathogenicity for guinea pigs, the murine virus presented a new and entirely different picture. Thus, beginning with the seventieth passage in mice, transfer of the virus from mouse to guinea pig could be obtained with a high percentage of takes. Of a total of 26 guinea pigs inoculated intracerebrally on different occasions with 0.1 cc. of unfiltered suspensions of the brains or cords of paralyzed mice, flaccid paralysis developed in 24, or approximately 92 per cent; of 6 guinea pigs inoculated similarly with filtered material (Berkefeld N or W candles being used as filters), 3 became paralyzed. Control injections of material from the brains of normal mice did not cause any paralytic symptoms in guinea pigs.

The following will briefly describe the symptoms and the pathologic changes caused by the disease in guinea pigs, as well as the distribution of the virus and the routes of infection. During a variable period of incubation there develops in a majority of the infected guinea pigs a preparalytic fever which drops with the onset of symptoms. When paralysis sets in it is usually complete, involving the hind legs more often than the front legs. The condition, as a rule, terminates in death, although partially paralyzed animals may go on to recovery (fig. 1). The pathologic changes in the central nervous systems of paralyzed guinea pigs reveal a typical poliomyelitic process in the anterior horn of the spinal cord associated with a mild encephalitic process. Perivascular infiltration is commonly observed, as well as complete or partial necrosis of ganglion cells with advanced neuronophagia. Lesions in the white matter are rare; the meninges have a normal appearance (fig. 2). The infectious agent can be recovered from the brains or cords of paralyzed guinea pigs; it has not been found in blood or in extraneural sites. Curiously enough, it is either the brain or the cord of a paralyzed guinea pig which contains the virus in a form pathogenic for guinea pigs, but rarely can the disease be further transmitted with both tissues of the same animal. A titer of 1 : 20 of suspensions of the brain or the cord represents the average potency of the guinea pig virus. Initial transfer of the virus from mouse to guinea pig may be accomplished by intracerebral inoculation or by subcutaneous, intraperitoneal and intravenous injections; feeding as well as nasal instillation have produced negative or questionable results. Once the virus has been established in the guinea pig, further propagation of the disease in that animal has succeeded only by intracerebral transfer.

Fig. 1.—Flaccid paralysis in guinea pig four days after intracerebral injection of murine poliomyelitis virus.

Neutralization tests in guinea pigs have shown that virus which has passed through guinea pigs is com-

3. Neustaedter, Marcus: Poliomyelitis in Guinea Pigs, J. A. M. A. **60**: 982 (March 29) 1913.

4. Picard, H.: Zur epidemischen Natur der Poliomyelitis anterior: Experimentelle und spontane Uebertragung auf Affen und Meerschweinchen, Ztschr. f. Hyg. u. Infektionskr. **105**: 307, 1925.

5. Jungeblut, C. W., and Sanders, Murray: Studies of a Murine Strain of Poliomyelitis Virus in Cotton Rats and White Mice, J. Exper. Med. **72**: 407 (Oct.) 1940.

pletely inactivated by guinea pig convalescent serum, antimurine virus rabbit serum and SK monkey convalescent serum; conversely, guinea pig convalescent serum has inactivated SK poliomyelitis virus in the monkey. Normal serum from monkeys or guinea pigs has uniformly failed to inactivate guinea pig virus. The serologic evidence, therefore, suggests the identity of the virus in its three hosts, i. e. monkey, mouse and guinea pig.

When passed serially through guinea pigs the virus shows a definite tendency toward deterioration. This is indicated not only by a progressive decrease in the percentage of infected animals in which manifest paralysis develops but also by a gradual lengthening of the period of incubation. Thus, in the late passages, incubation periods of from seven to twenty-one days were commonly observed, as compared with an average period of two to four days for the first transfers. This phenomenon appears to be characteristic for the virus in guinea pigs, since two attempts to maintain continuous serial passages in guinea pigs came to an abrupt

Fig. 2.—Section of cord from paralyzed guinea pig showing diffuse loss of anterior horn ganglion cells and degeneration of some of remaining nerve cells; also diffuse and perivascular infiltration by lymphocytes and increase in glial elements.

end with the sixth and seventh passages respectively. A third tree, at present, has been carried as far as the tenth generation.

Passage through guinea pigs brought about another significant modification of the virus. While active in guinea pigs, the infectious agent could be easily returned to mice and cotton rats but not to rhesus monkeys. However, when its virulence diminished for guinea pigs and mice, intracerebral inoculation of a rhesus monkey with material from the cord of a paralyzed guinea pig resulted, eight days later, in classic poliomyelitis, i. e. complete flaccid paralysis of the left leg with typical lesions on one side of the cord in the lumbar region. It would therefore seem as if some cyclic change in pathogenicity of the virus had taken place in the course of its passage from the monkey to rodents and back to the monkey.

Description of the fluctuating pathogenicity of the virus in various hosts brings us to a discussion of another property of the virus in guinea pigs, namely its power of inducing what would seem to be latent immunity. This was first noticed when guinea pigs, which had exhibited no demonstrable paralysis after intracerebral inoculation with virus subjected to passage in guinea pigs, failed to contract the disease on reinfection with highly potent mouse virus. Thus, of a group of 29 previously infected but symptomless guinea pigs, only 13 showed paralysis on intracerebral reinoculation. A similar protection was observed in 18 out of 21 guinea pigs which had escaped paralysis following injection of mouse virus by ineffective routes when these animals were reinfected intracerebrally with mouse virus. The incidence of paralysis in these two series should be contrasted with the infectivity of the mouse virus in normal control guinea pigs, which reaches as high as 92 per cent. Attempts to recover virus from the brain and cord of guinea pigs forty-eight hours after reinfection failed to demonstrate the presence of virus in the central nervous system of "latently immune" or convalescent animals, while active virus was readily recovered from infected normal guinea pigs. In three feeding experiments "latently immune" as well as normal guinea pigs continued to discharge active virus in their feces for a period of forty-eight hours after the oral administration of murine virus. Virus has never been recovered from the feces of intracerebrally infected guinea pigs or from the feces of normal guinea pigs. Essentially analogous observations were made with rhesus monkeys. Thus, among a group of 19 monkeys which had failed to respond with paralysis to intracerebral inoculation with virus passed through guinea pigs, 5 escaped the disease when reinfected intracerebrally with SK poliomyelitis virus; on the other hand, paralysis developed in all of 12 accompanying control monkeys.

It becomes evident from what has been said, that there are certain similarities and dissimilarities of the SK strain of poliomyelitis virus in monkeys and rodents which presumably develop during the transition of the infectious agent from one host to another. In the first place, one is impressed by the decided neurotropism of the virus in rhesus monkeys and in guinea pigs when contrasted with its wide distribution in mice. Second, as the range of hosts widens, a gradual expansion in the avenues of infection may be observed which seems to parallel the apparent diminution of affinity to specialized tissue. To wit, rhesus monkeys are constantly susceptible only to intracerebral injection of the virus, guinea pigs may acquire the disease by intracerebral, intravenous, intraperitoneal and subcutaneous injection, whereas mice succumb to intracerebral infection as well as to infection by all peripheral routes, including feeding and nasal instillation. Since the virus in mice has possibly a broader basis of cellular attack, it is not surprising that in vitro cultivation succeeds with mouse virus while similar attempts with monkey or guinea pig virus have produced negative results. However, these discrepancies may be more quantitative than qualitative because the virus reaches much higher levels of potency in mice than in either monkeys or guinea pigs. It would therefore seem that, in its basic properties and manifestations, the guinea pig virus approaches the monkey and human virus more closely than does the murine virus. Indeed, the similarity of guinea pig and human virus may well be said to be even more striking than that of monkey and human virus. For while SK virus in paralyzed monkeys is restricted to the central nervous system, occurring only in the spinal cord and not in the brain, and is transmissible at will from monkey to monkey in unbroken series, guinea pig virus gives evi-

dence of definite instability which recalls the behavior of the infectious agent in man. Thus not only is the virus distributed haphazardly between the brain and the cord of paralyzed guinea pigs but transfer of nervous tissue, despite the presence of obvious lesions, often fails to induce paralysis in guinea pigs. In other words, the extent of experimental transmissibility of the virus in guinea pigs bears some resemblance to the characteristic limitations of natural chains of infection observed in the picture of human epidemics of poliomyelitis. This superficial resemblance is further accentuated by the fact that guinea pig virus, in both guinea pigs and monkeys, seems capable of reproducing a state of latent immunity which has been suspected to operate in the disease in man but heretofore has not been clearly recognized in experimental poliomyelitis in monkeys. Experience must show whether these observations will ultimately lead to a fuller appreciation of the complex biologic properties of the virus of poliomyelitis and, furthermore, to what extent such observations can be made the starting point for a better understanding of the epidemiologic problems of the disease in man.

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# PSYCHIATRIC GERIATRICS

## THE POSSIBILITIES IN THE TREATMENT OF MENTAL STATES OF OLD AGE

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Geriatrics is the science of the treatment of diseases of old age. In the days of straight pathologic interpretation, this branch of medicine was neglected almost entirely because of the belief that arteriosclerosis and/or senile atrophy were the sole and only causes of the presented symptoms.

Senile organic changes are both progressive and irreversible. If the changes were causing the symptoms, the only thing for the physician to do would be to control the symptoms, and the only objective of society would be to provide care and custody for those whose mental faculties have been disturbed or destroyed by these pathologic developments. These concepts have led to a pessimistic outlook, by both physicians and laymen, and to a disinterest in geriatrics as a constructive branch of therapeutics.

The most distressing developments of old age are the mental symptoms. If the mental symptoms are interpreted as straight pathologic developments they are all hopeless, and every person over 60 who acquires mental symptoms should be confined immediately to an institution and considered to be in need of custody and protection the rest of his life.

In recent years study and observation of these conditions have shown that a straight pathologic interpretation in these cases should not be made. The classic statement "A man is as old as his arteries" is, of course, still true, but "old age" and "senile dementia" are not synonymous.

For years it has been customary to divide all the psychoses roughly into "functional" and "organic." This division puts almost the entire burden of the senile psychoses on structural changes, ignoring or minimizing any other possible factor. Rhein, Winkelman and Patten [1] worked out a classification of the mental manifestations of old age based on a correlation of clinical symptoms and postmortem observations. However, more than 30 per cent of their cases did not fit exactly into their classification, even with their advantage of complete pathologic study. Gellerstedt [2] and Rothschild [3] pointed out that there is no correlation between the intensity of mental symptoms and the severity of the pathologic changes. They found many severe pathologic changes in brains of patients with no history of mental symptoms. Riggs [4] also has found this to be true.

Wartman [5] found in 500 consecutive autopsies that 90 per cent of the men and 85 per cent of the women over 60 years of age had cerebral arteriosclerosis. These statistics confirm the concept that pathologic conditions are not the only factor. It is known that 90 per cent of the men and 85 per cent of the women over 60 are not afflicted with mental symptoms.

Rothschild [6] pointed out the difficulty of exact diagnosis and differentiation of senile dementia and arteriosclerotic psychosis, using pathologically proved cases for his material. He pointed out also the high incidence of other types of psychotic reactions which develop in the later years of life and which do not result from irreversible pathologic changes.

Clow [7] analyzed 100 cases of psychosis accompanying cerebral arteriosclerosis. It was pointed out that the past reactive history seemed to be important in that 61 of the patients were, in their adult years, more than ordinarily tense. Fifty of them were described as having an unusually narrow range of interest. A large proportion of them had made notably poor sexual adjustments. Thirty-three showed maladjustments ranging from frigidity to promiscuity and psychopathic behavior.

Toxic factors, such as a definitely excessive use of sedative medication, contributed to the development of the psychosis. Operations, trauma, infections and other activating incidents were noted in a number of the histories. Notwithstanding the large number of cases in which toxic and physical factors appeared to play the chief role, emotional disturbances apparently were by far the most frequent factors to upset the limited adjustment of the person with cerebral arteriosclerosis and to precipitate a psychosis.

A diagnostic breakdown showed that 34 patients had delirium as the presenting clinical picture, 19 agitated depression, 18 mental confusion, 5 depression, 5 manic-like states and 4 paranoid states. Only 14 patients presented deterioration as the most prominent feature.

Of these 100 patients 11 recovered, 12 were much improved, 31 improved, 30 did not improve and 16 died. Forty-nine patients were able to return home. Treatment consisted of psychotherapy and the applica-

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3. Rothschild, David: Pathologic Changes in Senile Psychoses and Their Psychobiologic Significance, Am. J. Psychiat. **93:** 757 (Jan.) 1937.
4. Riggs, H. E.: Personal communication to the author.
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6. Rothschild, David: The Clinical Differentiation of Senile and Arteriosclerotic Psychoses, read before the meeting of the American Psychiatric Association, Cincinnati, May 20-24, 1940.
7. Clow, H. E.: A Study of One Hundred Patients Suffering from Psychosis with Cerebral Arteriosclerosis, Am. J. Psychiat. **97:** 16 (July) 1940.

tion of principles of internal medicine. None of the patients were given any of the modern special procedures.

In my series presented here, in which every indicated method of treatment was used, i. e. psychotherapy, the principles of internal medicine, therapy by shock and

TABLE 1.—*Mental Symptoms in Fifty Patients*

| Clinical Diagnosis | Number of Patients |
|---|---|
| Primary toxic delirious reaction | 16 |
| Agitative depressive psychosis (affective reactions) | 16 |
| Senile dementia | 11 |
| Arteriosclerotic psychosis | 3 |
| Psychotic reactions to visceral disease | 3 |
| Psychoneurosis | 1* |
| Total | 50 |
| Secondary toxic delirious reaction | 10 |

* This series includes only 1 psychoneurotic patient. I have studied several other patients but refused to treat them for several reasons. This patient came to me recently, and the good result makes me hopeful that some help can also be given those with this type of reaction. Patients with similar conditions will receive treatment in the future.

infusions of dextrose, 66 per cent were able to return home. Palmer, Braceland and Hastings [8] reported on a series of 123 cases of senile and arteriosclerotic psychosis. These are true mental states of old age considered by all to result from pathologic changes, yet in their series 30, or 24.4 per cent, made a social recovery, i. e. became well enough to go home.

The physician who studies this material with an open mind cannot help but conclude that the pathologic conditions alone do not cause all the symptoms. There must be some other factors. The mental states of persons over 60 who present symptoms of an abnormal mental state must be analyzed in terms of total psychiatry rather than of pathology alone.

A series of cases at the Neurological Hospital confirms this concept. Three years ago my associates and I began to study this problem constructively and treat patients with these disorders intensively by every known means. We decided that every patient was entitled to a chance and that a hopeless prognosis would not be given until every possible therapeutic aid and measure had been exhausted. Since then we have studied and treated 50 patients over 60 years of age. There are a few other patients in this age class who, for various reasons, were not treated. Furthermore, there have been a number of patients under 60 admitted to the hospital who had demonstrable arteriosclerosis and a psychosis. Only those patients over 60 who received a full course of treatment are included in this series.

Table 1 gives the clinical diagnosis of this series. The term "primary toxic delirious reaction" indicates those cases in which a delirium-like reaction developed during the course of some major or minor illness or operative procedure. "Secondary toxic delirious reaction" indicates that the delirium which resulted from malnutrition, treatment measures and similar factors developed during the course of some other type of psychotic reaction. The cases of secondary delirium are not included in the totals, as they appear under the heading of the primary type of reaction. These secondary delirious reactions all cleared under proper treatment. "Psychotic reactions to visceral disease" has been set up as a separate entity. However, the use of this term may not be exact. The exact nature of some of the psychotic reactions to heart disease and other visceral diseases has not yet been determined.

While there is a definite pattern of the mental symptoms found in cases of cardiac disorders, no consistent etiologic factor other than the cardiac decompensation could be shown in Drewry and Wall's [9] series of 10 carefully studied cases. They reported that of 50 consecutive patients with heart disease, 4 (8 per cent) showed the clinical picture of "cardiac delirium." Gibson [10] reported an incidence of 10 per cent, while Coombs [11] and Romberg [12] considered the condition rare.

Michael [13] pointed out that arteriosclerosis may be one of the causes that modify the course of a mind disordered during cardiac decompensation to the extent that prompt recovery, the rule in patients who have recovered from signs of heart failure, is delayed. Ziegler [14] in his discussion of Michael's paper commented that psychoses arising from cardiac decompensation are delirious reactions or toxic psychoses.

Because of the difficulties of classification this group has been set up separately. It probably belongs in one of the classes of toxic delirium but was set apart because the primary physical disease still existed at the time of admission and was present when the patient left the hospital or died. These are cases of true organic heart disease. The tachycardias and arrhythmias of a functional or malnutritional type seen so frequently in psychotic patients are not considered to be a part of the etiology, clear up under treatment and do not belong in the visceral disease

TABLE 2.—*Results of Treatment*

| | Results on Discharge | | | |
|---|---|---|---|---|
| | Full Recovery | Social Remission | No Change* | Died |
| Syndromes with poor prognosis | | | | |
| Arteriosclerotic psychosis | .. | 2 | 1 | .. |
| Senile dementia | .. | .. | 9 | 2 |
| Total | .. | 2 | 10 | 2 |
| Syndromes with good prognosis | | | | |
| Primary toxic delirious reactions | 11 | 3 | 1 | 1 |
| Agitative depressive psychosis | 14 | 2 | .. | .. |
| Psychotic reactions to visceral disease | .. | 2 | .. | 1 |
| Psychoneurosis | .. | 1 | .. | .. |
| Total | 25 | 8 | 1 | 2 |
| Total of entire series | 25 | 10 | 11 | 4 |
| Secondary toxic delirious reactions | 8† | 1‡ | 1 | |

* Some of the patients in this discharge classification improved slightly but not enough to go home.

† All of these 8 patients had an underlying condition. These primary conditions did not all clear up, but the secondary delirium was relieved in all cases.

‡ This patient did not stay under treatment long enough. He had an arteriosclerotic psychosis, and the family was advised that there was not much hope of any permanent or good recovery. He remained at home for several months before his death.

8. Palmer, H. D.; Braceland, F. J., and Hastings, D. W.: The Psychiatry of Old Age, read before the meeting of the American Psychiatric Association, Cincinnati, May 20-24, 1940.

9. Drewry, P. H., Jr., and Wall, J. H.: Mental Reactions and Their Management in Patients with Cardiac Disease, Am. J. Psychiat. **94**: 561 (Nov.) 1937.

10. Gibson, A. G.: Mental Changes in Cardiac Disease, J. Ment. Sc. **76**: 632 (Oct.) 1930.

11. Coombs, C. F.: Mental Disorder in Cardiac Disease, J. Ment. Sc. **74**: 250 (April) 1928.

12. Romberg, Ernst: Lehrbuch der Krankheiten des Herzens und der Blutgefässe, ed. 2, Stuttgart, Ferdinand Enke, 1909.

13. Michael, J. C.: Psychosis with Cardiac Decompensation, Am. J. Psychiat. **93**: 1353 (May) 1937.

14. Ziegler, L. H., in discussion on Michael.[13]

group. It will be seen in table 2 that the reactions to visceral disease have the poorest prognosis.

The most striking fact in this diagnostic breakdown is the small number of cases (6 per cent) of arteriosclerotic psychosis. Muncie [15] pointed out that the clinical picture of this condition is distinguished by the uneven deteriorative changes, the presence of focal signs, general and retinal arteriosclerosis and the exclusion of other factors. Only 3 of my patients had focal signs indicating an area of cerebral destruction. I feel that a severe abnormal mental reaction resulting from a single vascular occlusion is rare, because large areas of the brain must be destroyed before permanent mental symptoms develop. Surgeons now remove a whole frontal lobe of the brain without producing any demonstrable change in the personality. Both frontal lobes or large areas of the brain must be removed to produce mental symptoms. Our 3 patients had had multiple attacks of apoplexy, indicating that there had probably been widespread destruction. The term, as used here, indicates that the psychosis results directly and exclusively from the arteriosclerosis and its effects, not as Clow used the term, indicating that arteriosclerosis was definite in his 100 patients with abnormal mental reactions. The pathologic references given previously indicate that extreme arteriosclerosis alone will not cause mental symptoms. I feel that many, if not most, of the conditions diagnosed as arteriosclerotic insanity are really toxic delirious reactions.

Arteriosclerosis is a factor in the total etiology in that it affects or lowers the adjustability of the whole organism and its physiologic processes, thereby making it easier for the various types of psychosis to develop. Only rarely, and then late in its course, does it cause a psychosis by itself alone. Senile dementia, on the other hand, results from "the exaggerated or premature appearance of rather specific parenchymatous changes, but these changes are seen frequently in individuals not suffering from senile dementia, although this finding is more or less a curiosity." [16] This condition was more common (22 per cent) in our cases. Senile dementia and arteriosclerotic psychosis were the only two types of reaction found in our series that resulted from changes in the brain alone and were, therefore, irreversible. Only 14, or 28 per cent, of the total series were in these groups. Theoretically then, 36, or 72 per cent, of our series fall into clinical classifications which might respond to modern psychiatric therapy.

Table 2 bears out this concept.

Thirty-five patients, or 70 per cent, of our total series recovered sufficiently to return home. These included 2 patients with an arteriosclerotic psychosis. Of the 36 patients who had conditions that should be expected to respond to active psychiatric therapy 25, or 69.4 per cent, recovered completely while 8, or 22.3 per cent, had a remission of sufficient quality to enable them to go home. This gives a percentage of 91.6 of the group with a reversible type of psychosis who were able to return home and take care of themselves rather than be confined in an "institution" for the rest of their lives. These figures certainly do not bear out the usual hopeless prognosis held for patients with mental disorders over 60.

15. Muncie, Wendell: Psychobiology and Psychiatry, St. Louis, C. V. Mosby Company, 1939.

16. Freeman, Walter: Neuropathology, Philadelphia, W. B. Saunders Company, 1933.

In this series the delirious patients received daily infusions of 10 per cent dextrose as outlined by me in a previous publication.[17] The patients with agitative depressive psychosis received metrazol to induce convulsive shock. One of these was 84 when treatment was given, and she remains well today, more than two years after treatment was given. None of these patients received any sedatives, nor were they given any hydrotherapy. The average length of time under treatment was about six weeks for those who recovered.

TABLE 3.—*Six Months Follow-Up* *

| Condition | Same State as at Discharge | Relapse | Died from Other Causes |
|---|---|---|---|
| Primary toxic delirious reactions | 9 | .. | .. |
| Agitative depressive psychosis | 7 | 2 | 1 |
| Psychotic reactions to visceral disease | 1 | .. | .. |
| Total | 17 | 2 | 1 |

* Includes only those with whom I have been able to make contact.

Table 3 shows the state six months after discharge of those patients who returned home. It is interesting to note the high percentage of sustained recoveries.

Twenty-four patients of the 33 with syndromes having a good prognosis who made a social remission or better have been home six months or more. I was able to establish contact with 20 of these patients six months after discharge. Seventeen of them, or 85 per cent, had maintained their good condition, showing that the therapeutic measures applied corrected or "cured" the psychosis and did not just give a "boost" or temporary mobilization of faculties. These sustained recoveries could not be expected if pathologic changes were responsible for the symptoms presented at the time of original contact.

## CONCLUSIONS

1. Pathologic changes of a destructive or deteriorative type were solely responsible for the symptoms in only 14, or 28 per cent, of this series of 50 patients over 60 years of age with abnormal mental reactions. Thirty-six patients, or 72 per cent, had types of mental illness that respond to modern therapy.

2. Of the 36 patients with a good prognosis, 33, or 91.6 per cent, recovered sufficiently to go home in an average length of time under treatment of six weeks.

3. Of the 33 patients who recovered, 24 have been discharged six months or more and only 2 have had a relapse; 1 died. Seventeen, or 85 per cent, of the 20 with whom I was able to maintain contact remained well at the end of six months.

4. Senile dementia and arteriosclerotic psychosis, the usual diagnosis for abnormal mental states in persons over 60, are not the common mental disorders of older people. The common disorders, such as toxic delirious reactions and affective reactions, usually an agitative depressive psychosis, may be corrected readily.

5. Psychiatric geriatrics is a fertile field for investigation and study from a constructive standpoint, and the results to be expected are as good as in the treatment of younger patients with mental disorders.

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17. Robinson, G. W., Jr.: Acute Confusional States of Old Age, South. M. J. **32**: 479 (May) 1939.

# CONTROL OF TUBERCULOSIS IN WISCONSIN

## THE RESULTS OF FOUR YEARS OF MASS STUDY IN SANITARY DISTRICT NO. 5, 1936 TO 1939

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The Wisconsin State Board of Health has sponsored programs of testing with tuberculin and roentgen examination in the school population as a case finding study and also as an educational program in an effort to make the public tuberculosis conscious. Although the programs were centered about the school population, the adults and children of preschool age also participated. The physicians and public health nurses in the various counties encouraged the "contacts" and suspected families to take the Mantoux test. This paper presents only the work carried out over a four year period, 1936 to 1939 inclusive, in Sanitary District no. 5 (fig. 1); the other districts carried on the same type of program.

The total area of the district is 7,054 square miles and is located in west central Wisconsin. The area is primarily devoted to dairying and farming, although the eastern part of the district has some of the largest paper mills in the state. The total population of the area is 240,000, of which there is an urban population (cities over 2,500) of only 55,000. The district is inhabited predominantly by German, Norwegian and Polish people, and less than 1 per cent of the population is Indian. The Indian population was not included in this four year study. There are approximately one hundred and eighty physicians in the district and twenty-two public health nurses. Two sanatoriums are located in the eastern part of the district.

A general plan was followed in which programs of mass testing with tuberculin and roentgen examinations were carried out. Usually the county boards appropriated the funds for tuberculin tests and roentgen examinations of the positive reactors, although in some counties local townships, the persons themselves or organizations supplied the funds. During the four year study, the various county boards in the district appropriated $23,916 for case finding in the control of tuberculosis. The county health committee, through the district health officer and county nurse, handled the publicity and obtained the signed request cards which authorize the physician to give the test. Radio talks were given, newspaper articles written, posters displayed and various groups addressed on the subject of tuberculin testing. The plans and policies were determined by the public relations committee of the individual county medical society or a special tuberculin testing committee appointed by the society. It was significant that the longer the publicity was maintained, the higher was the number of request cards returned by the parents or guardians giving the physician permission to test with tuberculin. No program was instituted in any county unless at least 75 per cent of the school population had signed to take the test. Practically all the physicians in the district participated in the testing program, and those who had adequate roentgen ray facilities took roentgenograms of the chests of the positive reactors. All the roentgenograms were examined by members of the Wisconsin Anti-Tuberculosis Association or by other qualified roentgenologists. Roentgenograms with poor contrast were retaken. Old tuberculin in the dilution of 1 to 1,000, prepared by the state laboratory of hygiene, was used exclusively.

The accompanying table summarizes the results of the program carried out in Sanitary District no. 5. The persons who were given the tuberculin tests and roentgen examinations were divided into five groups according to age. The table shows that of the 36,022 persons who received the Mantoux test 3,991 reacted positively and 32,031 negatively. There were 4,074 roentgenograms taken of the chests of the positive reactors; 414 persons had one or more roentgenograms taken because of suggestive conditions in the chest. It was found that 68 persons had active tuberculosis, and 164 were considered as having evidence suggesting active tuberculosis; consequently there were 232 cases of active or of suspectedly active tuberculosis discovered which had previously been unknown in the community. There were 1,222 persons who showed roentgen evidence of a healed primary complex. There were 2,297 persons who were considered as having a probable or a possible tuberculous infection and were classified as having negative roentgenograms of the chest.

It is interesting to note that through the 4,074 roentgenograms which were taken because the person examined was a positive reactor there were 465 persons found to have other pathologic abnormalities of which

*Totals and Results of Testing with Tuberculin and Roentgen Examination in Sanitary District No. 5, 1936 to 1939*

| | Preschool Children (1 Through 5 Years) | Grade School Children (6 Through 14 Years) | High School Students | Normal School Students | Adults | Totals |
|---|---|---|---|---|---|---|
| Number of Mantoux tests given from 1936 to 1939, inclusive | 505 | 23,418 | 10,049 | 144 | 1,906 | 36,022 |
| Number of positive reactors to Mantoux test, 1936-1939, inclusive | 56 | 1,611 | 1,538 | 24 | 762 | 3,991 |
| Total number of roentgenograms taken | 80 | 1,645 | 1,072 | 19 | 1,004 | 4,074 |
| Number having more than one roentgenogram, as a result of the rotating program, or as a result of suspicion of tuberculosis | 15 | 198 | 120 | 2 | 79 | 414 |
| Number of cases of active tuberculosis | 0 | 8 | 6 | 0 | 54 | 68 |
| Number of cases of suspectedly active tuberculosis | 6 | 47 | 25 | 1 | 85 | 164 |
| Number of roentgenograms showing primary tuberculous infection | 12 | 550 | 264 | 4 | 383 | 1,222 |
| Number of roentgenograms showing probable or possible tuberculous infection or negative | 32 | 959 | 868 | 0 | 438 | 2,297 |
| Number of roentgenograms showing pathologic lesions other than tuberculosis | 3 | 139 | 49 | 0 | 274 | 465 |

The number 4,074 refers to the total number of roentgenograms taken. Some of these patients (414) required one, two or even three roentgenograms over a period of six months to a year before a diagnosis of active tuberculosis was made. The figures 80, 1,645, 1,072, 19 and 1,004 reading across refer only to individual patients.

Dr. R. S. Baldwin, of the Marshfield Clinic, gave suggestions and criticism, and Mr. Harold Holand and the staff of the Wisconsin Anti-Tuberculosis Association prepared the charts and other material.

they, at the time, were not cognizant, for instance: One hundred and eighty-four patients had evidence of pleurisy; 150 had evidence of cardiac disorders; 75 had either acute or chronic bronchitis; 24 had suggestive bronchiectasis; 8 had evidence of pneumonia; 5 had tuberculous cervical glands; 3 had carcinoma of

Fig. 1.—Location of district health units.

the lung; 1 had a pulmonic abscess, and 1 had Hodgkin's disease. Some of these patients have since died. It is evident that to take roentgenograms of the chest annually is good preventive medicine, from the amount of nontuberculous thoracic disorders that was discovered.

Figure 2 presents graphically the number of persons tested in each age group. The grade school and high school students received the majority of tuberculin tests. This, of course, is to be expected, since the program was originally outlined with special emphasis on the school population. The grade school group received more than twice the number of tuberculin tests as compared to the high school group of students.

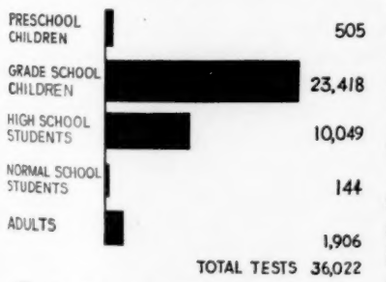


Fig. 2.—Tuberculin tests given, 1936-1939 inclusive.

Children of preschool age and adults were invited in to watch the procedure and then offered the tuberculin test. The adult and preschool groups represent only 7 per cent of the 36,022 who received tuberculin tests.

Figure 3 shows the percentage of positive reactors in the district and among each age group. For the entire district, only 11 per cent of those tested were positive reactors whereas in the state at large they average from 14 to 16 per cent. There were twice as many positive reactors discovered among the high school students as among the grade school students. The higher incidence of positive reactors in the preschool and adult groups is explained by the fact that the public health nurses and physicians exerted special efforts to bring in contacts and groups in which tuberculosis was known to have occurred at some time in the past or to exist at present. Although the adult and preschool groups represent only 7 per cent of those receiving tuberculin tests, they revealed the highest percentage of positive reactors.

Figure 4 shows graphically the incidence of cases of active tuberculosis in the district for each of the age groups tested and compares this with the normal expectancy for the state. This "normal expectancy" is based on the Framingham ratio for estimating cases (nine times the annual number of deaths from tuberculosis). A normal expectancy of 1 case of active tuberculosis is derived for every 336 persons in the general population. Thus, with an average estimate of 9,033 cases of active tuberculosis in Wisconsin during the period 1936-1939 and an estimated state population of 3,032,174, there would be 1 case of active disease

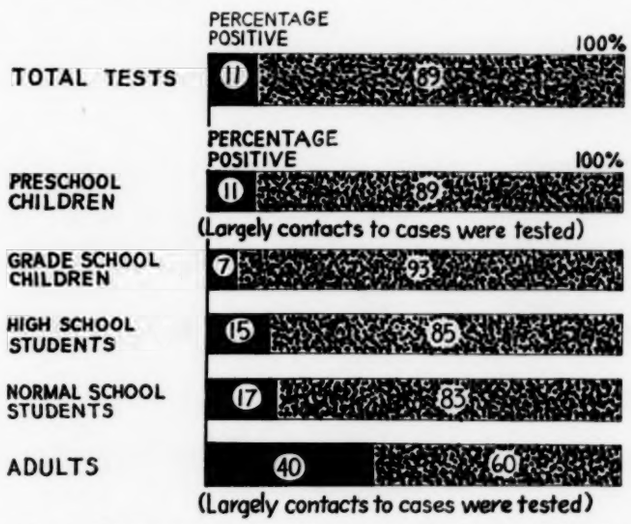


Fig. 3.—Percentage of positive reactors to tuberculin tests (Mantoux), 1936-1939 inclusive.

for every 336 persons in the state ( $\frac{3,032,174}{9,033} = 336$). Statistically, persons given a tuberculin test in the district are compared with this normal expectancy, giving the "case finding productivity" for each group tested. Thus, among adults tested with tuberculin, twenty-four and a half times as many cases of active and suspectedly active tuberculosis were found as would be expected in an unselected population. With adults tested, there was some selection of persons for the tuberculin test on the basis of contact or symptoms. Less than 1 case per 336 persons tested was found among grade school children, which is less than the normal expectancy for the general population. Only among high school students were as many cases found as one would expect to find in an unselected population in Wisconsin. The high total of four times the normal expectancy for preschool children is partly explained by a selection of children for the tuberculin test who were known to have been in contact with infectious tuberculosis.

These statistics on cases found show that it is among the contacts that the largest number of cases of active tuberculosis are to be discovered. Every case comes from another; every case may lead to another.

COMMENT

A great deal has been written about the tuberculin test, its value, its limitations,[1] its potential dangers[2] and its use in case finding.[3] This study definitely demonstrates that mass testing with tuberculin as a screening measure and case finding procedure is of economic and of educational value but requires modification in rotating programs, limiting it to selected groups, as in younger children and in adults, and to places in which the incidence of infectious tuberculosis is highest. It is also a valuable procedure in determining the incidence of tuberculosis in the community.

Although there were 32,031 negative reactors discovered, it is known that many of these may react negatively today and positively tomorrow.[4] The negative reactors cannot be forgotten, and all the attention should not be focused on the positive reactors. Occasionally cases are encountered in which the

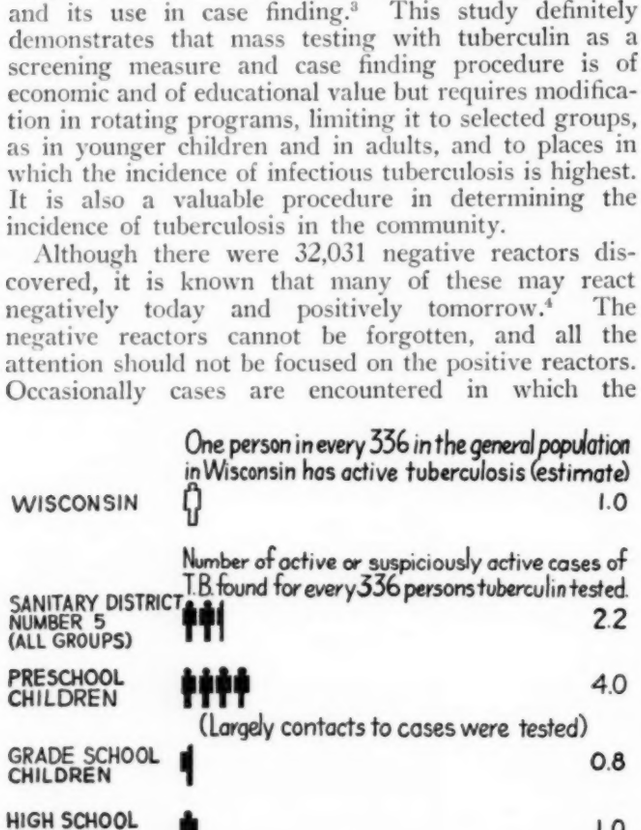
One person in every 336 in the general population in Wisconsin has active tuberculosis (estimate)
WISCONSIN
1.0
Number of active or suspiciously active cases of T.B. found for every 336 persons tuberculin tested.
SANITARY DISTRICT NUMBER 5 (ALL GROUPS)
2.2
PRESCHOOL CHILDREN
4.0
(Largely contacts to cases were tested)
GRADE SCHOOL CHILDREN
0.8
HIGH SCHOOL STUDENTS
1.0
NORMAL SCHOOL STUDENTS
2.3
24.5
ADULTS
(Largely contacts to cases were tested)
Compare the BLACK figures with the normal OUTLINE figure. The black figures show how effective the case-finding program in District 5 was for each group tested.

Fig. 4.—Cases found for groups tested with tuberculin, 1936-1939 inclusive.

evidence of tuberculosis exists but the reaction to tuberculin is negative.[1] I found a number of such cases. One cannot prove that all persons who react negatively to the tuberculin test have escaped earlier infection, since there is evidence that cutaneous hypersensitiveness may wane or disappear.[5] Howe[6] has shown that there may be considerable daily fluctuations in cutaneous sensitiveness to tuberculin. Many studies indicate that more tuberculosis develops among those who react negatively to tuberculin on exposure than those who react positively.

More than 90 per cent of all the positive reactors have had one or more roentgenograms made. Those whose roentgenograms had a suggestive appearance may have had new ones every month or every three to six months. It is important to remember that one of the most difficult parts of the program was to get roentgenograms of the positive reactors. What about the group of patients who had a positive reaction to tuberculin with a normal roentgenogram of the chest?[7] The tendency is to say that they are healthy and that no special care is needed, but there are patients of this type on record who died of tuberculosis within two and one-half years. Ch'iu, Myers and Stewart[8] in a ten year follow-up examination of children, of whom 446 were positive reactors and 772 were negative reactors, found that 15.02 per cent of the positive reactors were sick with a reinfection type of tuberculosis as compared to 1.68 of the negative reactors. Thus there were 9 cases of tuberculosis among the positive reactors to 1 among the negative reactors. The ratio between the mortality for the positive reactors and that for the negative reactors is 38 to 1. Pope and his associates[9] found that the morbidity from adult type tuberculosis was four times as great among the positive reactors as among the negative reactors. If nothing is done about these positive reactors possibly 15 per cent of them will eventually incur active tuberculosis for which institutional care is needed.

It is noteworthy that the majority of the persons who had definite roentgen evidence of primary tuberculous infection exhibited no external sign of tuberculosis and, as a matter of fact, would not have known that they had the primary complex had they not taken the tuberculin test. The course of the disease in adults is apparently the same as in infants and children—active treatment is not necessary, but all must be looked on as potential cases of reinfection type of tuberculosis at some future date.[10] It is significant that in those areas in which infection in childhood is most common the highest mortality is found in adult life; in areas such as Cattaraugus County, N. Y., in which a majority of the adolescents are demonstrably tuberculin negative, the mortality in adult life is low.[11]

It has been estimated[12] that there are more than 500 patients with active tuberculosis in the district, of whom less than 50 per cent have been hospitalized. This presents a specific problem in the district. As a direct result of this program, 232 cases of active or suspectedly active tuberculosis were discovered which had previously been unknown in the community. No incorrigible person with infectious tuberculosis should be permitted to be at large. The patient with infectious tuberculosis must be segregated, and the education of the population in the prevention, early discovery, communicability and prevalence of tuberculosis must continue. More widespread emphasis should be placed on the prevention of the transmission of infection, and more general use of roentgenograms, especially in cases of suspected and doubtful tuberculosis, is necessary if more minimal tuberculosis is to be discovered. The preclinical case must be detected. It is essential to

1. Long, E. R.: The Tuberculin Test: Its Value and Limitations, Am. Rev. Tuberc. **40:** 607-620 (Dec.) 1939.
2. Lincoln, Edith M., and Grethmann, Wolfang: The Potential Dangers of the Tuberculin Tests, J. Pediat. **15:** 682-696 (Nov.) 1939.
3. Doull, J. A.: The Tuberculin Test in the Control of Tuberculosis, Am. Rev. Tuberc. **40:** 634-639 (Dec.) 1939.
4. Ritter, John: The Negative Tuberculin Reactors, Illinois M. J. **71:** 347-350 (April) 1937.
5. Soper, W. B., and Amberson, J. B.: Pulmonary Tuberculosis in Young Adults, Am. Rev. Tuberc. **39:** 9-32 (Jan.) 1939.
6. Howe, J. S.: Daily Variations in Tuberculin Reaction, Am. Rev. Tuberc. **37:** 264-272 (March) 1938.
7. Novak, J. B., and Kruglick, J. S.: End Result of a Tuberculosis Case-Finding Project, J. A. M. A. **112:** 1452-1454 (April 15) 1939.
8. Ch'iu, P. T. Y.; Myers, J. A., and Stewart, C. A.: The Fate of Children with Primary Tuberculosis, J. A. M. A. **112:** 1306-1308 (April 8) 1939.
9. Pope, A. S.; Sartwell, P. E., and Zacks, David: Development of Tuberculosis in Infected Children, Am. J. Pub. Health **29:** 1318-1325 (Dec.) 1939.
10. Myers, J. A.; Ch'iu, P. T. Y., and Streukens, T. L., Jr.: Primary Infection in Adults, Am. Rev. Tuberc. **39:** 232-235 (Feb.) 1939.
11. Frost, W. H.: How Much Control of Tuberculosis? Am. J. Pub. Health **27:** 759-766 (Aug.) 1937.
12. Holand, Harold, Statistician, Wisconsin Anti-Tuberculosis Association: Personal communication to the author.

check the discharged sanatorium patients periodically. Respectfully scrutinize the very aged for active tuberculosis. Concentrations of sputum and gastric lavage should be done more frequently as a routine procedure in searching for the tubercle bacillus.

Since the inception of the program, the various counties in the district have had rotating programs; selected age groups and contacts have been retested, and most of the positive reactors are given a roentgen examination annually. The campaign against tuberculosis has been successful, probably as a result of three factors: first, education; second, improved medical and public health facilities, and third, improvement in general living conditions. In the epidemiology of tuberculosis, the public health nurse plays an important role along with the physician; the follow-up of contacts and of families is of extreme importance in control and in discovering the source of infection. The control of tuberculosis presents a more complex problem than almost any other of the communicable diseases for which the cause is known.[13] Environmental factors seem to have a more common influence on the development of the disease than do the constitutional factors.

SUMMARY

Four years of intensive mass tuberculin tests and roentgen examinations engaged in by the general practitioner in cooperation with the state board of health in Sanitary District no. 5 of Wisconsin have revealed the following:

1. There were 36,022 tuberculin tests to which 3,991 persons reacted positively and 32,031 negatively. There were 4,074 roentgenograms taken and 232 cases of active or suspectedly active tuberculosis discovered. There were 1,222 roentgenograms which showed definite evidence of primary tuberculous infection. There were 465 roentgenograms revealing other pathologic lesions, exclusive of tuberculosis, of which the patients were not cognizant at the time. It is apparent that the use of roentgenograms is good preventive medicine for the early diagnosis and discovery of other conditions of the chest.

2. The negative reactors should not be dismissed and all the attention focused on the positive reactors.

3. The case finding productivity was highest in the adult and preschool groups, which represented only 7 per cent of the total number tested. This shows that it is among "contacts" that the largest number of cases of active tuberculosis is to be discovered.

4. This program was successful because the various methods of publicity that were employed made the communities tuberculosis conscious.

5. The cost of this program was only $23,916, which represents a small investment of money in comparison to the dividends returned to the taxpayers by discovering early tuberculosis and thereby decreasing sanatorium costs.

6. Tuberculosis is a communicable disease, and the spread of it tends to concentrate around the infectious case; consequently the control of tuberculosis still rests with the family physician and a heavy responsibility with the medical profession and health officials. It is evident that tuberculosis still presents a fertile field for the early application of the newer developments of medical science; much work remains to be done.

13. Plunkett, R. E.: Tuberculosis Control, J. A. M. A. **113**: 2288-2292 (Dec. 23) 1939.

# *Clinical Notes, Suggestions and New Instruments*

## MULTIPLE HEMANGIOMAS OF BONE, PROBABLY CONGENITAL

JOHN W. PIERSON, M.D.; GEORGE FARBER, M.D., AND JOHN EAGER HOWARD, M.D., BALTIMORE

Diffuse osteolytic lesions of the skeletal system are often among the clinician's most difficult diagnostic problems. Even microscopic examination of biopsy material may be inconclusive for exact diagnosis. We have recently seen a patient whose widespread lesions confused several physicians in other localities as well as ourselves. The correct diagnosis was established only by skeletal biopsy. Because we have found in the literature no clinical description of a similar case, we feel justified in calling the entity to the attention of the profession in order that it may be considered in the differential diagnosis of patients who suffer with multiple skeletal lesions, osteolytic in character.

### REPORT OF CASE

*History.*—R. P., a white man aged 21, was referred to us by Dr. Warfield M. Firor for diagnostic study. The patient's medical history was free of all but minor illnesses until his skeletal difficulty was accidentally brought to light. Birth and development had been normal. At the age of 3 years the tonsils and adenoids had been removed. He suffered annually from mild attacks of hay fever in the latter part of the summer.

In September 1934, at the age of 16 years, after wrestling with his brother, the patient noticed slight swelling and tenderness over the left clavicle. Two days later, when tackled in a football game, he experienced a sudden sharp pain in this clavicle. Roentgenograms were taken at once and disclosed that the clavicle had been fractured through a cystic area. On the same film were noted several cystic areas in the scapula. Roentgenograms were then taken of many other bones, revealing widespread skeletal lesions of cystic type.

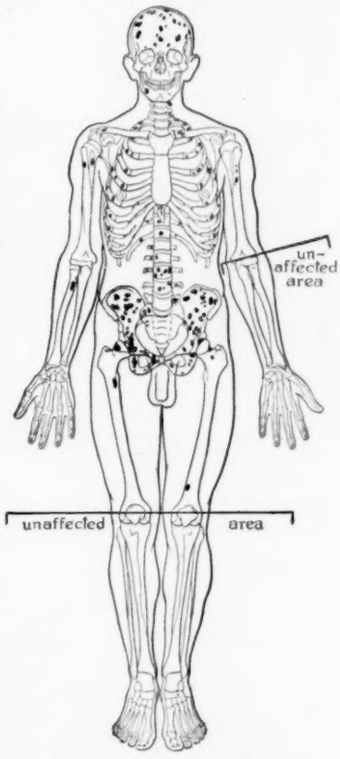


Fig. 1.—Distribution of the lesions.

A diagnosis of hyperparathyroidism was made (metabolic status or electrolyte status of the serum at this time is not known) and twelve roentgen treatments were given to the anterior cervical region over a period of six months. Coincidentally he was given a calcium preparation intravenously twice each week and drank 3 quarts of milk daily. The patient states that his physicians were unable to detect any change in the skeletal lesions at the end of six months. Thereafter, for three and a half years, the patient received no therapy whatever (he continued to drink 1 quart of milk daily) and felt in the best of health. In the spring of 1939 a specimen was taken for biopsy from one of his ribs and was diagnosed osteitis fibrosa cystica.

*Physical Examination.*—The patient's weight was 162 pounds (73.6 Kg.) and his height 70 inches (178 cm.). The pulse was 80, the respiratory rate 18 a minute; blood pressure was

From the Departments of Roentgenology and Medicine of the Johns Hopkins University School of Medicine and Hospital.

125 systolic and 80 diastolic. He was well developed and healthy looking and stated that he had no symptoms of any kind. There were a few tiny pigmented moles scattered over the skin of the torso, but otherwise the skin was clear and

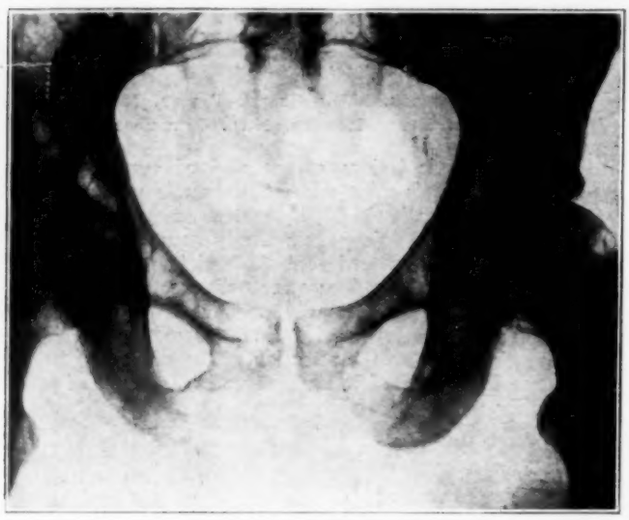

Fig. 2.—Multiple cystic areas in the pelvis with trabeculae through some of the lesions. Lesions overlap but apparently they are not confluent.

of normal texture. The scalp was searched for pigmented areas without success. No palpable or visible abnormalities could be detected in the skeleton. General physical examination by several observers resulted in perfectly normal findings.

Laboratory studies showed the hemoglobin content 16.3 Gm. (112 per cent), red blood cell count 4.91 millions, hematocrit reading 47 mm., white blood cell count 4,550. A smear and differential count were done and were normal, with 5 per cent eosinophils.

Fasting serum calcium determinations were made on four occasions and ranged from 10.4 to 10.7 mg. per hundred cubic centimeters of serum. Fasting serum phosphorus was determined coincidentally and ranged from 4 to 5.5 mg. per hundred cubic centimeters of serum. Total serum protein ranged from 6.34 to 6.5 Gm. per hundred cubic centimeters of serum.

Fig. 3.—Skull showing multiple punched out areas without surrounding reaction. Diploic involvement best seen just anterior to coronal suture.

Nonprotein nitrogen was 30 mg., cholesterol 231 mg. and sugar 100 mg. per hundred cubic centimeters. Carbon dioxide combining power was 52 volumes per cent. Serum chloride was 100.6 milliequivalents. Serum phosphatase activity on two occasions was 2.5 Bodansky units.

Examination of several specimens of urine revealed no abnormal constituents.

The entire skeleton was examined roentgenologically; the distribution of the lesions is shown in figure 1.

*Roentgen Examination.*—Lesions were widely distributed over the osseous system; they represented cystic changes in the spongiosa which were outlined by condensed bone. These cysts were traversed by irregular coarse trabeculae, and many of them were expansive (figs. 2, 3, 4 and 5).

The skull showed numerous such lesions in the vault, where they caused localized expansion of the diploe with thinning and bulging of the tables. Large vascular channels appeared to enter some of the cysts. The left posterior clinoid process was deformed. No change was demonstrated in the base of the skull.

The vertebral bodies contained large cysts, some of which extended into the pedicles and transverse processes. The right pedicles and transverse processes of the second and third lumbar vertebrae were greatly expanded and a number of spinous processes of the other vertebrae were involved. Similar lesions were seen in the ribs and shoulder girdles. The fifth and eighth ribs on the right and the seventh rib on the left side showed pathologic fractures through the cysts. The pelvic bones were filled with irregular cysts.

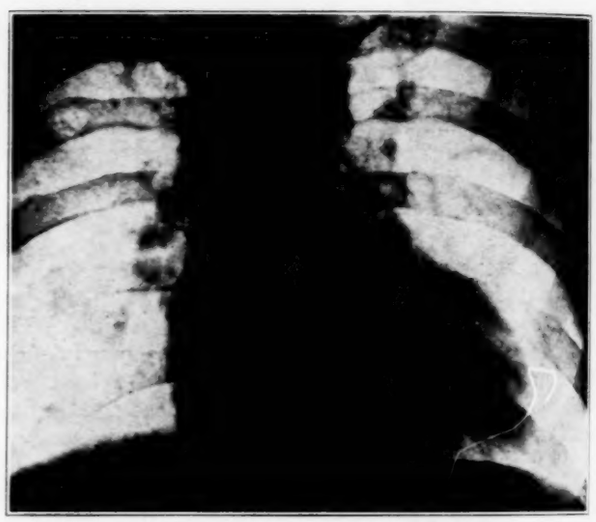

Fig. 4.—Ribs showing multiple cystlike areas with expansion.

The femoral heads were the sites of large cysts, which were found subjacent to the faintly outlined epiphysial lines. Small cystic changes were visualized along the inner surface of the cortex of the left humerus. A large solitary cyst was demonstrated in the upper end of the right humerus and another the size of an almond was located in the lower portion of the left femur. The cortex surrounding the latter cyst appeared to be expanded, and a radiolucent channel in the cortex communicated with the cyst. This radiolucent channel represented a large blood vessel. Small, less sharply outlined lesions were seen in the upper portions of the femurs. The bones of the left forearm, lower legs, hands and feet were normal in appearance.

For ten days the patient was on a low calcium diet (estimated but not analyzed). At the end of this period a metabolic study of his urinary calcium was begun, on a diet containing 0.116 Gm. of calcium and 0.8 Gm. of phosphorus a day for two consecutive three day periods. Urinary calcium excretion during the first of these periods was 0.396 Gm. of calcium (0.132 Gm. a day) and for the second period 0.420 Gm. of calcium (0.140 Gm. a day). These amounts are well within the range of normal.

A 4 cm. portion of the sixth rib was removed for pathologic study [1] by Dr. Warfield M. Firor.

According to Dr. S. S. Blackman's report on the pathologic sections, the microscopic specimen consisted of four cross sec-

1. The microscopic sections were made for us by Dr. Stacy R. Guild of the Department of Otolaryngology.

tions of a rib (figs. 6, 7 and 8). They did not appear to form a continuous series, but in three of the sections a multilocular cavernous hemangioma could be traced. It extended from near the center of the marrow cavity outward and into the cortex of the external surface of the rib. Where the angioma occupied the more central part of the marrow cavity, at the point of greatest dimensions, it formed a single large space measuring 8 by 5 mm. Scattered irregularly in the normal myeloid and adipose tissue of the marrow, about the margins of the larger cavities of the angioma, there were a good many smaller angiomatous channels which varied from about 80 to 300 microns in greatest diameter.

The channels in the angioma were more or less completely filled with blood. At some levels they contained only serum. They were lined by a layer of endothelium superimposed on an exceedingly thin basement membrane which was only a little thicker than the walls of normal venules in the marrow.

In places the walls of the angioma lay directly over bony spicules of the shaft of the rib. In other areas the cells of the marrow lay immediately beneath the angioma, and at one point the angioma was in contact for a short distance with the inner surface of the cortex of the rib.

Fig. 5.—Cystic appearing area in lower end of femur with thinning and expansion of cortex.

The bone trabeculae near the margins of the largest of the angiomatous cavities in the shaft of the rib were concentrated closer together than normal and tended to lie parallel to one another. They were narrower than the normal trabeculae lying at a distance from the angioma, and some of them were composed of partly calcified osteoid tissue. Where the angioma extended into the cortex of the bone the latter was extremely thin, measuring in places not more than 40 microns. The normal cortex of this bone, on the contrary, varied from about 0.5 to 2.5 mm. in thickness.

## COMMENT

In the literature there are many reports of hemangiomas involving the skeleton. In 1930 Bucy and Capp [2] reviewed the literature up to that date and reported cases of their own. Pich [3] described a case of hemangioma of the calvarium which was thought to be a sarcoma and, therefore, resected. But these reports are of isolated skeletal lesions. Saltykow [4] reported a case in which, at autopsy, hemangiomas were found to involve three vertebrae.

The records of the department of pathology of the Johns Hopkins Hospital were searched to see whether a similar condition had been observed. Many cases in which hemangiomas involved isolated bones were found. In three cases hemangiomas were found to have involved more than one bone: In one case several vertebrae were involved, in another case three ribs were found to be the seat of hemangiomatous lesions, and in the third the skull and one vertebra were involved. In no case, however, were there anything like the widespread lesions occurring in our case.

The clinical data on our patient and roentgenograms taken of him were presented to several of our associates here and elsewhere prior to the establishment of the diagnosis, and the correct diagnosis was never once even suggested as a diagnostic possibility. For these reasons we believe the condition to be quite rare.

Furthermore, the roentgenographic characteristics of the disease, at least as exemplified in our case, are quite decisive and clear cut. The lesions appear as extremely sharply demarcated, vacuolated areas in bones which seem otherwise entirely undisturbed by their presence. No evidence of fibrous, osteogenic or other irritative response appeared either roentgenographically or microscopically. The thin areas immediately surrounding the

Fig. 6.—Angiomatous area in cortex of rib.

Fig. 7.—Angiomatous cavity in rib marrow. Under the microscope this cavity is seen to be filled with serum.

2. Bucy, P. C., and Capp, C. S.: Primary Hemangioma of Bone, Am. J. Roentgenol. **23**: 1 (Jan.) 1930.
3. Pich, G.: Ueber das Osteoangiom des Schädeldaches, Beitr. z. path. Anat. u. z. allg. Path. **101**: 181, 1938.
4. Saltykow, S.: Ueber das Angiom der Wirbelsäule, Verhandl. d. deutsch. path. Gesellsch., 1909, p. 370.

cysts we regarded as areas of condensation and not true reactions of the bone to the tumor. The individual or clustered cystic areas varied in size from that of a large olive to that of a millet seed. Their distribution was equally remarkable and unusual. After roentgenography of the entire skeleton only one lesion was apparent below the elbows or knees. This

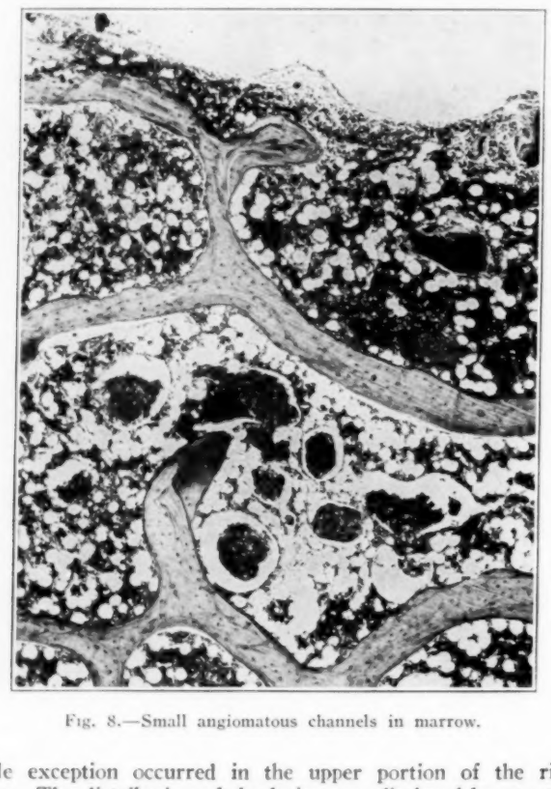

Fig. 8.—Small angiomatous channels in marrow.

single exception occurred in the upper portion of the right radius. The distribution of the lesions, as disclosed by roentgen rays, is seen in figure 1.

Another striking feature is the excellence of the patient's general health. Even after we had seen the roentgenograms and knew of his skeletal abnormalities, nothing abnormal could be made out on physical examination, nor were we able to elicit any symptoms of disability whatever. It is interesting to speculate as to how long the patient's disease might have continued unrecognized had not his fracture necessitated roentgen examination.

But of more importance to the patient is the (as yet) unanswerable speculation "Is the condition progressive or not?" We have assumed that the condition is of congenital origin. Will the lesions gradually develop, with pressure atrophy of more and more bone, until too little skeletal structure will remain for supportive purposes? Two reasons have led us to believe that this would not be so: 1. We have been unable to detect any progress of the lesions over a five year period when we compared the roentgenograms of the skull, long bones and thorax taken in 1935 with our own made in November 1939. 2. Nowhere either in the roentgenograms or in the specimen taken for biopsy have we been able to find any evidence of osseous destruction, irritation or effort at repair. We have given this patient a sanguine prognosis and urged him to carry out his planned matrimonial venture.

In differential diagnosis the most likely confusion will arise from xanthomatosis. The latter disease commonly causes multiple, clear-cut, irregular cystic areas in the skeleton without evidence of any response on the part of the affected bone. Furthermore, the patient may be in apparently the best of health until the terminal phase of his disease. Distribution of the lesions should, however, if our case is characteristic, give a clue, and biopsy should be conclusive.

Osteitis fibrosa cystica (hyperparathyroidism) should be readily distinguished by (1) its characteristic metabolic disturbances and (2) the generalized rarefaction if the skeleton is involved at all.

Osteitis fibrosa disseminata may be differentiated by (1) the completely different distribution of the skeletal lesions, (2) their different appearance on roentgen examination (areas of rarefaction beside contiguous areas of new osseous formation), (3) the pigmented areas on the skin and (4) the precocious sex development in females of this group.

These three are by far the most likely skeletal diseases to be confused with the condition under discussion. But when one considers the matter closely it may be seen that, clinically, this differential diagnosis is really not difficult for any one of them, except the first, provided one knows of and thinks of the possibility of disseminated hemangiomas of bone. Our worst confusion was not that we thought our patient suffered with any one of the three diseases just mentioned but that at that time we did not know of any other condition he might have. It seems useful, therefore, to record this case, which should be kept in mind when cystic or vacuolated multiple skeletal lesions are encountered which do not fit in with any of the other more common disease entities.

24 East Eager Street.

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## USE OF PYRIDOXINE HYDROCHLORIDE (VITAMIN $B_6$) IN PARKINSONISM

MEYER A. ZELIGS, M.D., CINCINNATI

The numerous and recent successes in the field of vitamin therapy have made enthusiastic and stimulated clinician and investigator alike. Almost monthly new clinical application of administration of vitamins is reported in leading medical periodicals throughout the country. That much of this work has proved of real and lasting value there is not the slightest doubt; the alleviation of symptoms and cure of long-known disease processes which heretofore have been therapeutically unapproachable unequivocally attests to this fact. The heroic relief obtained in patients with severe deficiency states, especially prevalent in the South, and those less obvious but more widespread alterations of the human economy which one now recognizes as "subclinical" or "hypovitaminotic" states are

*Effect of Pyridoxine Hydrochloride on Patients with Parkinsonism*

| Name | Age, Years | Sex | Clinical Features | Duration, Years | Dose, Mg. | Results |
|---|---|---|---|---|---|---|
| | | | **Postencephalitic Patients** | | | |
| J. B. | 27 | ♂ | Severe generalized parkinsonism | 14 | 50 | No change observed |
| E. N. | 34 | ♂ | Severe generalized rigidity and tremor; oculogyria | 20 | 50 | No change observed |
| F. O. | 53 | ♂ | Severe generalized parkinsonism; masked facies; cogwheel rigidity | 5 | 50 | No change observed |
| G. H. | 37 | ♀ | Tremor of face and arms; stare; flexion posture | 9 | 40 | No change observed |
| J. J. | 44 | ♂ | Very severe generalized parkinsonism; masked facies with stare; flexion posture; oculogyria | 5 | 50 | No change observed |
| M. P. | 51 | ♀ | Moderate cogwheel rigidity of neck and extremities | 2 | 50 | No change observed |
| H. S. | 40 | ♂ | Mild left hemiparkinsonism | 2 | 100 | No change observed |
| J. H. | 36 | ♂ | Moderate generalized tremor and rigidity | 3 | 100 | No change observed |
| E. W. | 48 | ♀ | Moderately severe tremor of face and arms | 4 | 100 | No change observed |
| J. D. | 38 | ♀ | Generalized tremor; no rigidity | 8 | 100 | No change observed |
| | | | **Arteriosclerotic Patients** | | | |
| I. G. | 79 | ♂ | Tremor and stiffness of right arm and hand | 1 | 50 | No change observed |
| A. S. | 60 | ♂ | Severe tremor of arms and head | 1 | 50 | No change observed |
| C. L. | 64 | ♀ | Mild generalized tremor; moderate left-sided rigidity | 1 | 100 | No change observed |
| C. I. | 64 | ♂ | Severe generalized cogwheel rigidity and tremor | 22 | 40 | No change observed |
| A. W. | 54 | ♀ | Masked facies; tremor of tongue and extremities; flexion posture | 4 | 100 | No change observed |

being increasingly brought under control. However, the enthusiasm and eagerness of clinicians to use vitamin therapy in nondeficiency and other conditions have expanded the clinical application of these substances far beyond their proper confines. This wave of enthusiasm must, therefore, be guided by true observation and tempered by sound clinical judgment.

The present study was instigated after the appearance of several reports by Jolliffe and others [1] which dramatized immediate and amazing beneficial effects in postencephalitic and arteriosclerotic parkinsonism by the intravenous administration of one or more doses of 50 to 100 mg. of pyridoxine hydrochloride (vitamin $B_6$). Dr. Jolliffe reported this work in April 1939 at a symposium on vitamins at Mount Sinai Hospital, New York, and again before the American Neurological Association in June 1940.[2] He stated that "within a few minutes there was much improvement, rigidity was decreased significantly and the patients were able to walk without the usual stiffness." Spies later reported before the Illinois State Medical Society the results of studies concerning the use of pyridoxine in 11 selected cases of parkinsonism of at least four years' duration, 8 of which were arteriosclerotic and 3 postencephalitic. He stated that "within a few minutes there was much improvement in the latter 3."

In view of the gratifying results obtained by these reliable workers, I felt moved to try this same type of therapy. Accordingly, a group of 15 patients with parkinsonism were selected from private practice, 10 of whom had the postencephalitic and 5 the arteriosclerotic type. Daily doses of 50 to 100 mg. (repeated one to three times) were administered intravenously to this group. I might add that this series of patients constituted an especially fitting one for such a study, since all of them had previously been under my observation for a period of six to eighteen months. Real improvement could therefore be accurately evaluated by comparison with the carefully recorded previous condition of the entire group. Moreover, particular care was taken to avoid any suggestive comment at the time of injection or thereafter, so that the psychologic effects of a "new" medicine would not be a factor in the therapeutic result. This is particularly important, I believe, since the threshold of suggestibility in patients suffering from parkinsonism is universally low and any therapeutic result can be easily misconstrued in such patients. This high degree of suggestibility which characterizes the parkinsonian state must be constantly kept in mind when making observations on such patients.

The results of this study, as shown in the accompanying table, revealed no beneficial effects whatever in any of the patients in this group. Two patients stated that they "thought they felt a little better," although careful neurologic examination at the time and several days later revealed no change in the degree of muscular rigidity or tremor. No toxic or untoward effects were noted at any time after the administration of doses as high as 100 mg. given intravenously.

### COMMENT

It is my opinion as well as the opinion of many other workers that in order to consider a special form of vitamin therapy truly efficacious in altering the course of a known disease process the following two criteria should be fulfilled: (*a*) A deficiency should exist in the bodily economy of the particular vitamin substance which is being supplanted artificially, and (*b*) any degenerative process which has developed as a result of an existing deficiency must necessarily still be "reversible" in order for the specific therapy to be of value.

The rationale which initially prompted workers to administer pyridoxine hydrochloride to patients with parkinsonism fulfils neither of these two essential criteria. It has never been shown, either experimentally or clinically, that parkinsonism can result from deficiency of vitamin $B_6$. Secondly, the neuropathologic changes localized in the globus pallidus and substantia nigra, which are known to be the underlying lesions of parkinsonism, represent a degeneration which has occurred and existed for years in these areas of the central nervous system. It is a profound type of structural damage, characterized pathologically by the replacement of nerve cells by glial tissue and one which can hardly be considered "reversible."

### SUMMARY AND CONCLUSIONS

1. Repeated intravenous doses of 50 to 100 mg. of pyridoxine hydrochloride were administered to a selected group of 15 patients with parkinsonism.

2. No beneficial effects whatever were noted after this treatment.

3. No untoward effects were noted as a result of this treatment.

4. On the basis of the foregoing study it is my opinion that pyridoxine is of no value in the treatment of parkinsonism.

638 Doctors Building.

1. Jolliffe, Norman, cited by Spies, T. D.; Hightower, D. P., and Hubbard, L. H.: Some Recent Advances in Vitamin Therapy, J. A. M. A. **115**: 292-297 (July 27) 1940.

2. Jolliffe, Norman: Treatment of Paralysis Agitans by Vitamin $B_6$, read before the meeting of the American Neurological Association, Rye, N. Y., June 6-8, 1940.

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## *Special Article*

# LEGAL RESPONSIBILITY FOR MEDICAL MALPRACTICE

### II. MALPRACTICE: SOMETHING OF THE ANATOMY OF THE LAW

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When a physician seeks to make contact with legal thought, he may feel as forlorn and lost as a curious traveler among users of an unknown tongue. This is not so much because the law is filled with words of art or because lawyers desire to keep the subject out of reach of the layman. Courts now regard it as a vain display to use Latin maxims, and much of the old technicality has been swept away. The real difficulty arises because the layman is unfamiliar with a limited number of combinations of vowels and consonants which lawyers take for granted.

He who acts as interpreter should proffer enough comment to make the landmarks vivid and the journey pleasant, while sparing his charge the ennui of the encyclopedic. It is in the role of such a guide that I have essayed this abbreviated account of the modern law and the materials with which it works.

On July 5, 1939 the Supreme Court of Pennsylvania handed down its important opinion in *Hodgson et al.* v. *Bigelow*, 335 Pa. 497, 7 Atlantic (2d) 338. The plaintiff, a boy of 8 years, fell on a stick while at play and received a dirty, penetrating wound of the thigh, 5 inches (13 cm.) long. The defendant, a practicing physician of Philadelphia, relying on his judgment, made no incision or débridement, did no test to determine hypersensitivity to serum and gave no tetanus antitoxin. Finding the mouth of the wound was half an inch (1.3 cm.) wide, he swabbed to the bottom with alcohol and iodine, inserted a loose gauze drain and applied a sterile dressing. He repeated the same treatment on three successive days, the wound appearing "very satisfactory." He did not see the boy on the fifth day, but on the sixth, the stepfather told the physician the child had complained about his jaws hurting and being stiff. Thereupon, the physician made an examination and pronounced the jaws and mouth "perfectly normal." On the seventh day the boy was rushed to a hospital, suffering from tetanus and a staphylococcic infection of the leg. He had a stiff neck, his

mouth opened only half an inch (1.3 cm.), his abdominal muscles were rigid and he suffered from generalized rigidity of all the voluntary muscles. He spent four weeks in the hospital; he underwent débridement of the wound immediately and a closure operation twenty-three days later and received a total of 750,000 units of antitetanus serum. By the time he was discharged he had incurred medical bills of more than $1,500. He sued the defendant for alleged negligence in failing to administer tetanus antitoxin.

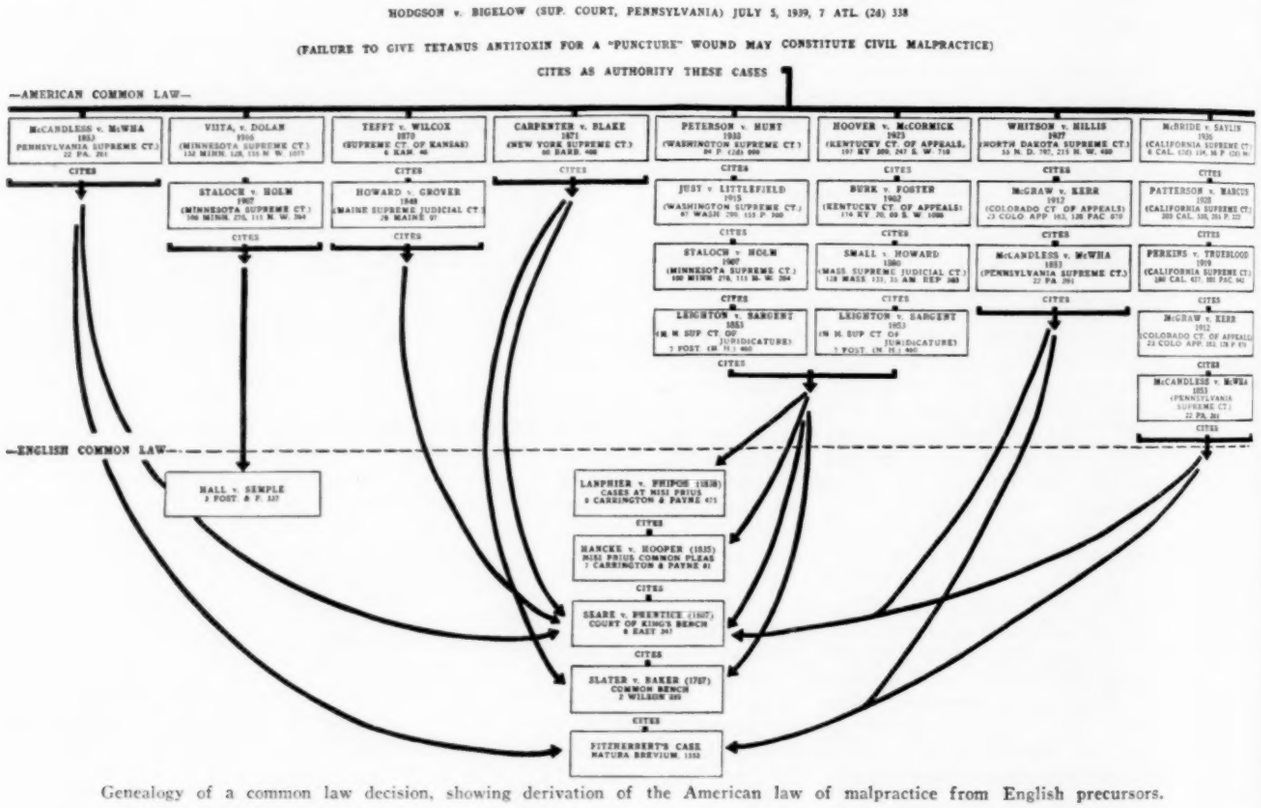
At the trial, five reputable physicians and surgeons (among them X) in testifying for the plaintiff asserted that the injury was a "puncture wound," which prevailing medical standards in the community demanded should be incised to its depths, cleaned and drained and which necessitated giving the patient a subcutaneous injection of 1,500 units of tetanus antitoxin immediately, with a repetition in ten days. The defendant on cross examination was asked this question: "So the wound when you finished treating it was still a puncture wound rather than an incised wound?" He answered: "Yes."

The defendant called nine physicians of good professional repute (among them Y), and they testified, in effect, that a substantial group of physicians in good standing in Philadelphia in May 1936 would have rendered the same treatment which Dr. Bigelow did in this case. On cross examination they admitted that the administration of antitoxin would be indicated for a "puncture" wound, but though they had not seen it, they refused to consider this a "puncture" wound because instead of a narrow mouth it had an orifice which would admit air, a swab and a drain.

The trial judge said, in the jury's hearing, of one item of testimony given by Y, a witness for the defendant: "The effect of that is, of course, to destroy X's testimony."

Furthermore, in submitting the case to the jury, the trial court did not make clear the important questions, or "issues," they were to decide. The jury returned a verdict for the defendant. The trial court granted a motion for new trial filed by the plaintiff. It did so because the court was of the opinion that perhaps some of its rulings and remarks may have been prejudicial to the plaintiff. From the order granting a new trial, the defendant appealed. The Pennsylvania Supreme Court held that the new trial was properly granted, saying:

> The first question for us to decide is whether or not the plaintiff made out a prima facie case of malpractice against the defendant; if this question is answered in the *negative*, the verdict in favor of the defendant should stand and no new trial should be had. If the question is answered in the *affirmative*, we are then faced with the second question: Did the court err in granting a new trial?


HODGSON v. BIGELOW (SUP. COURT, PENNSYLVANIA) JULY 5, 1939, 7 ATL. (2d) 338
(FAILURE TO GIVE TETANUS ANTITOXIN FOR A "PUNCTURE" WOUND MAY CONSTITUTE CIVIL MALPRACTICE)
CITES AS AUTHORITY THESE CASES
—AMERICAN COMMON LAW—
McCANDLESS v. McWHA 1851 (PENNSYLVANIA SUPREME CT.) 22 PA. 261
VIITA v. DOLAN 1900 (MINNESOTA SUPREME CT.) 132 MINN. 128, 156 N. W. 1077
TEFFT v. WILCOX 1870 (SUPREME CT. OF KANSAS) 6 KAN. 46
CARPENTER v. BLAKE 1871 (NEW YORK SUPREME CT.) 60 BARB. 488
PETERSON v. HUNT 1930 (WASHINGTON SUPREME CT.) 84 P. (2d) 999
HOOVER v. McCORMICK 1923 (KENTUCKY CT. OF APPEALS) 197 KY. 309, 247 S. W. 710
WHITSON v. HILLIS 1927 (NORTH DAKOTA SUPREME CT.) 55 N. D. 767, 215 N. W. 480
McBRIDE v. SAYLIS 1926 (CALIFORNIA SUPREME CT.) 6 CAL. (2d) 150, 56 P. (2d) 961
STALOCH v. HOLM 1907 (MINNESOTA SUPREME CT.) 100 MINN. 276, 111 N. W. 264
HOWARD v. GROVER 1849 (MAINE SUPREME JUDICIAL CT.) 28 MAINE 97
JUST v. LITTLEFIELD 1915 (WASHINGTON SUPREME CT.) 87 WASH. 709, 153 P. 1080
BURK v. FOSTER 1962 (KENTUCKY CT. OF APPEALS) 176 KY. 70, 195 S. W. 1080
McGRAW v. KERR 1917 (COLORADO CT. OF APPEALS) 63 COLO. APP. 163, 126 PAC. 879
PATTERSON v. MARCUS 1928 (CALIFORNIA SUPREME CT.) 205 CAL. 148, 269 P. 1121
STALOCH v. HOLM 1907 (MINNESOTA SUPREME CT.) 100 MINN. 276, 111 N. W. 264
SMALL v. HOWARD 1880 (MASS. SUPREME JUDICIAL CT.) 128 MASS. 131, 35 AM. REP. 365
McCANDLESS v. McWHA 1851 (PENNSYLVANIA SUPREME CT.) 22 PA. 261
PERKINS v. TRUEBLOOD 1919 (CALIFORNIA SUPREME CT.) 180 CAL. 637, 182 PAC. 942
LEIGHTON v. SARGENT 1853 (N. H. SUP. CT. OF JUDICATURE) 7 POST. (N. H.) 460
LEIGHTON v. SARGENT 1853 (N. H. SUP. CT. OF JUDICATURE) 7 POST. (N. H.) 460
McGRAW v. KERR 1917 (COLORADO CT. OF APPEALS) 63 COLO. APP. 163, 126 P. 879
McCANDLESS v. McWHA 1851 (PENNSYLVANIA SUPREME CT.) 22 PA. 261
—ENGLISH COMMON LAW—
HALL v. SEMPLE 3 POST. & P. 127
LANPHIER v. PHIPOS (1838) CASES AT NISI PRIUS 8 CARRINGTON & PAYNE 475
HANCKE v. HOOPER (1835) NISI PRIUS COMMON PLEAS 7 CARRINGTON & PAYNE 81
SEARE v. PRENTICE (1807) COURT OF KING'S BENCH 8 EAST 348
SLATER v. BAKER (1767) COMMON BENCH 2 WILSON 359
FITZHERBERT'S CASE NATURA BREVIUM. 1552

Genealogy of a common law decision, showing derivation of the American law of malpractice from English precursors.

By a 4 to 3 decision, the court held that the plaintiff's evidence, including testimony that the injury was a "puncture" wound, made out a prima facie case of negligence against the defendant for failure to administer antitoxin. But the defendant's witnesses denied it was a "puncture" wound. This conflict in the expert testimony raised a disputed question of fact, which must be submitted to the jury. If the injury was found not to be a "puncture" wound, the defendant's omission to give antitoxin would not constitute negligence. In that event, the way he treated the injury represented a legitimate choice between two alternative approved methods. The trial court committed prejudicial error in failing to clarify the issue so as to make it clear to the jury that the crucial question was "'puncture' wound or not" and in transgressing the province of a trial judge by declaring that the testimony of Y destroyed that of X. This comment on the evidence was an improper and prejudicial invasion of the jury's function, since the credibility and weight of all testimony

is for the jury to decide. Therefore, the order granting a new trial had to be affirmed.

This case was chosen not only for its intrinsic interest but to test the assertion sometimes made that the American common law of malpractice has no kinship with the law of England. Of course it is only the preserved, published opinions of courts of appeal that collectively make up the large body of "judge-made" or so-called "common law."[1] On questions not covered by constitution or statutes this "common law" is the law of the land. Appellate judges shy away from deciding cases without precedent, and so they refer to earlier opinions of their own and of sister states in support of the immediate action taken. If an opinion is carefully analyzed, it will be found to turn on one or more crucial principles. These constitute the "ratio decidendi," while the composite of loose, unnecessary language indulged in in reaching the decision is called "dicta." A dictum has no binding force as precedent but only such persuasive influence regarding a later case as its logic and vigor may win for it. One may ask: In America, where the forty-eight states are autonomous and each has its judicial system, what influence do the appellate decisions of one state have on the courts of a sister state? The answer is that all the states but Louisiana[2] at an early date adopted the then existing English common law as a basis of decision or as an analogous reference. They then began a process of changing and developing it to suit the needs of the new world. In this evolution, a given state court is bound only by the precedents of its own appellate courts or, on federal questions, by the precedents of the United States Supreme Court. Nevertheless, on novel questions, it is customary for lawyers to argue and courts to consider, as persuasive authority only, the opinions of the highest courts of other states and, indeed, sometimes of the modern English courts. Thus, in respect to many legal questions of common concern, a symmetric development and growth have been preserved throughout the nation through this process of habitual reference to decisions of other jurisdictions. On more disputable questions, appellate courts of different states may subscribe to different views and thus give rise to so-called "splits of authority."

One may begin with the most recent opinion of a court and by tracing back the precedents on which it relies to still earlier precedents come, at last, to the common source of them all. Such endeavor is reminiscent of the labor of a grubbing geologist, who uncovers a late stratum and then earlier ones, until at last he proves that the bird of the later stratum sprang from some ancient reptile of an earlier layer. I have traced in the chart the genealogy of the main authorities cited in *Hodgson* v. *Bigelow,* skipping some of the intermediate stratums, to show that legal tradition is continuous and that conceptions of medical responsibility, in fact, trace back to original English progenitors.

In connection with legal sources, what are the types of "judge-made" precedents which collectively form the common law applied by the courts? For convenience, some of the more significant features of the three essential types have been tabulated in comparative form.

1. Recently, the occasional written opinions of federal district courts and the trial courts of one or two states have been published and thus preserved as precedents of a lower rank.

2. This state has a unique local law derived from the civil doctrine of the Napoleonic Code, a heritage of its days as a French possession. Several of the Western states have community property laws (controlling property rights between husband and wife), which are a heritage of the Spanish law.

## TYPES OF "JUDGE-MADE" LAW

### ORIGIN

CIVIL COMMON LAW:

Civil common law is a composite of (1) ancient customs of the realm; (2) contributions of old Germanic law; (3) conceptions of land tenures and other legal ideas brought to England by the Normans in 1066; (4) rights and duties created by the royal prerogative; (5) special concessions exacted from the crown in way of guaranties of basic rights and human liberties, as the "Magna Charta"; (6) old acts of parliament; (7) occasional, unacknowledged references to Roman law in deciding novel controversies; (8) accumulated precedents of prior cases; (9) actual extensions of existing doctrine (true lawmaking), under the guise of interpreting old principles; (10) interpretations of statutes and constitutions in case of ambiguous language or of doubt as to the scope of their application; (11) enforcements of new policies of law arising from the legislative function in the form of constitutional provisions, municipal ordinances, statutory enactments or proper administrative rulings, and (12) "Americanizations" of the English common law as taken over shortly after the American Revolution. Modern common law has parted company with the old system of "writs" and the scholastic approach to liberalize its entire perspective and bring its doctrines as to procedural and substantive law into keeping with the changing social order.

CRIMINAL COMMON LAW:

In general, the origin of criminal common law is the same as that of civil common law except that in modern times "penal codes" have been enacted in most jurisdictions, which define what conduct shall be deemed criminal, fix the magnitude of the offense and prescribe appropriate penalties and punishment. Thus, what is a misdemeanor in one state may today, by virtue of positive enactments, constitute a felony in another. Building on these points of departure, a large body of "judge-made law" has sprung up for construing and applying the penal codes to the diverse problems presented to the courts for solution. These precedents of appeal courts are preserved and again form reference material for subsequent proceedings.

EQUITY:

Equity began as an exercise of royal prerogative on petition of persons to the crown in peculiar cases for which rigid common law did not provide substantial justice. As these appeals grew, the king delegated such matters to one person, who finally grew to the stature of chancellor, administering justice on the individual merits of the case according to the respective "equities" of the parties.

Thus, after the Norman Conquest in 1066, the office of chancellor was usually occupied by an ecclesiastic who, as a member of the king's select council, helped determine causes which the ordinary judges were incapable of determining. This was in fact an exercise of the king's royal prerogative in his place and stead. By the reign of Edward I, the chancellor had gained some independent judicial stature and was hearing cases referred by the king or council. The new tribunal advanced rapidly in power and came to sit as a regular court at Westminster during the reign of Edward III (1327 to 1377). The establishment of the Court of Chancery as a regular tribunal for administering equitable relief and extraordinary remedies is usually referred to the twenty-second year of the reign of Edward III, when he ordered by general writ that all such matters as were of Grace should be referred to the chancellor, but this probably merely confirmed an existing practice of many years' duration. The practice of appointing as chancellor jurists versed in common law, instead of ecclesiastics, arose during this time, and by the end of the reign of Henry V (1413 to 1422) the strictly formative period was over, and Chancery was one of the strongly entrenched courts of the realm. Its prestige and power were greatly enhanced through the fact that the statute of 13 Edw. I, Ch. 1, § 24, which had been intended to enable the invention of new writs in law actions to cover novel situations, was aborted by the strict and narrow construction put on its language by the common law judges; this tended to freeze the whole common law system of writs in its existing pattern

and drove the litigant (plaintiff or defendant) with a novel contention back into equity.

At first, precedents were not saved, but later they were preserved and resorted to as authorities and constituted a separate system of equity jurisprudence supplementary to the law.

Reasons for the development of equity lay in certain deficiencies of the common law:

1. There was a scholastic rigidity of certain doctrines of the old common law.

*Example.*—Suppose X sued Y on a sealed instrument. At law, Y could not plead a release and discharge unless it, too, was under seal. In equity, such a defense could be asserted.

2. In early common law there developed a system of "writs," or so-called "forms of action," under which a plaintiff must be able to fit his case to recover.

*Examples.*—"Replevin" was the proper action to recover personal property wrongfully taken; "detinue" to recover property rightfully taken but wrongfully detained; "trespass vi et armis" for direct injury by the intended act of another; "trespass on the case" for consequential or unintended injury by another (as by negligence), and "trespass quare clausum fregit" for trespass on real property.

Unfortunately, the invention of new standardized writs was not continued by the common law; and the principle of growth being arrested, litigants with novel claims which no existing writ would fit were without remedy in a court of law and so resorted to the king and later to the chancellor.

3. Law courts generally could not command a defendant to do a given thing.

*Exception.*—There was the writ of mandamus at law to require a public official to perform a legal duty.

The chancellor in equity could order such acts on pain of punishment for disobedience ("contempt").

4. The old common law dealt only with two-sided disputes, while equity would adjust the competing interests of several parties in a common subject matter.

5. The old common law would not consider events transpiring after the writ was filed, while equity would take into account all that occurred until the end of the suit and decree accordingly.

6. The law presupposed an existing controversy or alleged injury as the basis of action, while equity would render advisory opinions in respect to such subjects as a proper distribution of trust funds.

To avoid unseemly conflicts with courts of law, equity early adopted the rule that it would assume jurisdiction only when the remedy at law was inadequate and the burden rested on the petitioner to show this inadequacy.

## PROCEDURE [3]

CIVIL COMMON LAW:

The plaintiff proceeds by action at law, pleading his cause of action in a petition or declaration served on the defendant. In this pleading he sets forth the essential facts of the defendant's alleged wrongful conduct, details the injury caused thereby and prays judgment for a specified sum in money damages by way of compensation.

CRIMINAL COMMON LAW:

The state is plaintiff and proceeds by complaint or indictment against the defendant, who is arrested but may remain at large until trial by posting bail (usually a bond providing for forfeiture of the principal amount in event the defendant defaults by failing to appear for trial).

EQUITY:

The petitioner (plaintiff) brings a suit in equity against the respondent (defendant) on a pleading known as a bill, the respective allegations of which the respondent in his answer must specifically admit, deny or qualify.

3. In no court can a plaintiff prove what he has not pleaded, and the same rule applies to defendants in respect to affirmative defenses.

## COURT IN WHICH ADMINISTERED

CIVIL COMMON LAW:

Cases in civil common law are tried in civil courts, the proper court of original jurisdiction being determined by such considerations as the nature and the size of the demand, as set forth in local statutes conferring the jurisdiction.

CRIMINAL COMMON LAW:

Cases in criminal common law are tried in criminal courts or, in smaller localities, by the judge of the civil court sitting as a court of criminal law.

EQUITY:

Under old English practice, law and equity were administered by separate courts. Now, in a single proceeding, a litigant may have both the legal and the equitable remedies to which his case might entitle him. The old procedural distinction has been abolished in modern times in most states by "merger clauses" of state constitutions or statutes. These confer on one judge the full powers formerly wielded by the separate courts of law and equity. They do not affect the substantive distinctions between the two systems of jurisprudence. Hence, though equitable remedies may be had in the same action, they will be granted, as before, only on a showing that available legal remedies are inadequate.

In a few states (Delaware, Maryland, Mississippi, New Jersey, Tennessee and Vermont), separate equity courts are still maintained. In these states, one cannot get an equitable remedy in a law court. In the federal practice, the traditional distinction between the courts of law and of equity is preserved in a somewhat different way. Federal district courts maintain separate dockets for law and for equity cases. At law term, the court tries law cases; at equity term, it sits as a court of equity. Differences in the mode of pleading law and equity cases are not abolished as in state practice under "merger" provisions. Both parties are required to plead according to the federal equity rules promulgated by the United States Supreme Court.

## MEASURE OF PROOF REQUIRED

CIVIL COMMON LAW:

The plaintiff must establish the essential elements of his case by a preponderance of the (credible) evidence. Both parties have a constitutional right to trial by jury of any question of fact.

CRIMINAL COMMON LAW:

The state must prove its case beyond a reasonable doubt. A constitutional right of trial by jury may be asserted by the defendant.

EQUITY:

Equity may vary the degree of proof required according to whether the circumstances are "suspicious" and demand "clear and convincing proof." Generally speaking, it requires only a preponderance of the evidence. At common law, no right to trial by jury existed in equity. Accordingly, it is held in the federal courts that no right to trial by jury exists today in a federal suit in equity, the constitutional guaranty preserving only such right as existed at common law.

## MODE OF TRIAL

CIVIL COMMON LAW:

If the plaintiff and the defendant join in "waiving" jury trial, questions both of law and of fact are tried by the court. If a jury is demanded, the trial functions are divided. The court is to decide questions of law, rule on adequacy of pleadings and on admissibility of evidence, enforce rules of court and "instruct" a verdict for the appropriate party when the person carrying the burden of proof fails to offer enough evidence to warrant reasonable men founding a verdict on it. If, however, an issue of fact is raised by conflicting testimony, the court must prepare a proper "charge," submitting the pertinent questions of fact to the jury under such appropriate legal definitions as may be

required. In general, in state courts, the judge is forbidden to comment to the jury on the weight or credibility of the evidence. Under the practice of the federal courts, the judges possess such power of comment.

It is the province of the jury to decide the questions of fact according to the weight of the credible evidence before them, giving such weight and credence to testimony as they see fit. Thus a party with one witness may prevail over his opponent who offers six. Material facts not offered in evidence cannot be considered by the jury, and they are not to concern themselves with the legal effect of their answers.

CRIMINAL COMMON LAW:

In general, there is the same division of functions when judge and jury are used: The court determines the law, and the jury determines the facts.

EQUITY:

The chancellor in equity determines questions both of law and of fact (except in those states whose constitutions broadly guarantee a right to trial by jury of every issue of fact, without distinction between law and equity).

He may make use of a jury in an advisory capacity to help determine facts or appoint a referee or auditor to go over a series of complicated transactions, as in alleged corporate swindles, financial frauds, accountings and trust transactions.

## TYPE OF REMEDY GRANTED

CIVIL COMMON LAW:

The court grants substitutional redress in the form of money damages. The court enters judgment on the verdict for the damages established but does not collect them. In seeking payment, the plaintiff must put his judgment in the hands of the sheriff; the latter levies execution on any discoverable "non-exempt" assets of the defendant and sells them at public sale. Today, courts of law also foreclose mortgages and fix liens, and by statute a plaintiff may "sequestrate," "attach" or "garnishee" various types of property pending trial in certain specified cases covered by statute.

As contrasted with equitable remedies, law remedies usually give redress which is substitutional and not "in personam"; the defendant is not ordered to do a specific thing.

CRIMINAL COMMON LAW:

The sentence of the court is penal: fine, imprisonment or execution, each being a price exacted by society as expiation for the crime. One should not overlook the fact that in appropriate cases the severity of the penalty may be reduced by probation or suspended sentence or by the intervention of executive clemency in the form of pardon.

The penalty is characterized by some jurists as "retributive," by others as deterrent and by those who are still more inclined to hold society partially at fault as both "deterrent and reformatory."

There can be no doubt that modern law has supplemented the primitive concept of pure retribution with a humane interest in rehabilitation. This has gone forward with a more honest recognition of the limitations of "free will" and of the role of social factors in the causation of some types of criminality. The final warrant for the more enlightened approach to the problems of criminality, in the eyes of many, is still the protection of society, but protection achieved by a species of intelligent prophylaxis directed against future criminality.

EQUITY:

The court acts directly on the person of the defendant, requiring him by its decree to perform or desist from certain conduct. It can also assess money damages as supplemental relief.

Among its important special remedies are: (1) granting of injunctions; (2) granting specific performance of unique contracts (as for sale and purchase of land), when the law would give only money damages for the breach; (3) decreeing rescission and cancellation of contracts obtained by fraud; (4) quieting of title by removing "clouds from title;" (5) granting accounting in termination of partnership relationships and so forth; (6) appointing receivers, as for insolvent corporations, and (7) creditors' bills and bills of discovery.

## RIGHT OF APPEAL

CIVIL COMMON LAW:

Provided the sum involved is above a certain minimum amount and provided there is conformance with jurisdiction statutes, either party within a specified time after trial may perfect an appeal. Usually the case may be carried to an intermediate court of appeal as a matter of right but to the state supreme court only in the latter's discretion. If, as in some states, there are no intermediate courts, the disappointed litigant may usually take his appeal to the state supreme court as a matter of right.

Appeal to the United States Supreme Court is granted only in that court's discretion, only on certain questions and only when appeals to the highest state courts are first exhausted. The Supreme Court is increasingly confining its grant of appeals (that is, grant of writ of certiorari) to questions involving important federal legislation, constitutional guaranties or matters of national public importance.

CRIMINAL COMMON LAW:

The defendant has a right of appeal, but the state has none.

EQUITY:

Either litigant may appeal.

## SCOPE OF APPEAL

CIVIL COMMON LAW:

No new testimony can be offered on the questions under litigation. For the facts, the court looks to the jury's verdict (containing fact findings) or, in the absence of a jury, to the findings of fact entered by the trial judge. As to the sufficiency of evidence to support such fact findings, the court looks only to the sworn testimony and exhibits contained in the "statement of facts" prepared by the court reporter, approved by counsel and verified by the trial judge. Pleadings, rulings of the court and judgment are included in a separate "transcript" similarly prepared and verified. The "statement of facts," "transcript" and "appeal bond" constitute the record which comes before the appellate court. Counsel are confined to arguments of law, namely, (1) that as a matter of law no evidence was offered warranting submission of fact issues to the jury and (2) that errors of law were committed by the trial court in its rulings, in its judgment or in the conduct of the trial; that prejudicial conduct was indulged in by opposing counsel (such as improper argument) or that misconduct occurred in the jury room (such as consideration of matters not in evidence).

An appellate court can enter one of three decisions in a case properly before it: (1) affirm the judgment of the trial court; (2) reverse the judgment entered below and remand the cause for a new trial, or (3) when the case has been fully developed on the merits and it appears that a judgment awarded a party in the trial court is based on evidence too flimsy to support the verdict of a reasonable man, reverse and render the judgment of the trial court. This involves taking the judgment from the party to whom it was awarded below and making it final in favor of the opposite party. This drastic power is exercised only in the most clearcut cases and usually in cases in which the trial court erroneously refused a motion for an instructed verdict based on the same want of evidence.

CRIMINAL COMMON LAW:

The scope of review is similar to that of civil common law.

EQUITY:

The scope of review is similar to that of civil common law.

## APPLICATION TO QUESTIONS OF MEDICAL RESPONSIBILITY

CIVIL COMMON LAW:

Civil common law is the law which is most important and most frequently applied. The doctrines of civil law which are most pertinent are:

1. The law of contracts: It affects the creation of the physician-patient relationship and modifies the scope of duty which automatically arises under the law of torts.

2. The law of torts: It is made up of doctrines which permit a person to recover compensatory damages for injuries due to invasion of his rights of property or personality by another and are not dependent on contractual or consensual relationship.

(1) Battery: Any touching of another for which consent has not been obtained.

*Example.*—The action of a surgeon who with permission to remove the appendix alone removes the patient's tonsils as well.

Under old common law, proper action was by writ of trespass for a direct, intended contact.

(2) Fraud on the rights of health of the patient:

*Example.*—The action of a physician who, knowing that his treatment can be of no benefit, induces a patient to continue it and thus to incur a large bill by assurances that it is well suited to effecting a cure.

Even though the wrong is intentional, the injury is usually consequential. Hence, under the old common law, the writ would be "action on the case."

(3) Negligence: A negligent affirmative act or an omission to act in respect to one to whom a duty of care is owed.

*Example.*—The action of a physician who causes serious injury by negligently inserting acid instead of oil into the ears of a patient. Or again, the action of the physician who abandons the care of a sick patient without his consent or without due notice of his intention to withdraw.

Negligence is redressible as consequential, unintended injury at common law by action of trespass on the case, or "case."

(4) False imprisonment: Holding of another prisoner against his free will.

*Example.*—The action of a physician who by force requires a patient of sound mind to come with him against his will to some place for supposedly urgent treatment.

The remedies are purely substitutional, money damages being given by way of compensation.

The only element of punishment in any of these civil actions is rare assessment of "punitive damages" for extreme or gross malpractice.

CRIMINAL COMMON LAW:

1. Penal sanctions are contained in medical practice acts, which are directed against practice without a license.

2. Penal sanctions are directed against those acts which constitute violations of criminal law whether committed by a physician or by a layman, such as (1) murder, (2) criminal abortion, (3) dispensing of narcotics and (4) assault and battery.

Note: These are so-called international crimes, which are recognized without reference to whether they are perpetrated in the course of medical practice. If they are committed in the care of a patient, they may also constitute malpractice, and the act which injures the state and is thus a crime may also afford basis to the injured person for a civil malpractice suit to recover compensatory damages.

3. In regard to the crimes which might be committed by a physician in the course of an honest effort to cure a patient and which, therefore, represent the most likely instances of criminal malpractice, three crimes should be considered:

(1) Murder. At the common law and under many modern statutes, there may be a murder conviction based on death caused by an extreme kind of recklessness, although there may have been no intent to cause the death of the victim. As applied to a physician, it would need to be proved that he used a form of medical treatment which was so imminently dangerous to the patient as to show a "depraved mind regardless of human life." Needless to say, prosecutions of this kind against physicians are rare.

(2) Manslaughter. The penalty for this crime is less than that for murder, and a correspondingly lower degree of recklessness is required, although even for liability for this crime the death must have been caused by conduct showing a greater degree of negligence than is necessary for civil liability.

(3) Assault and Battery. If injury to a patient short of death is caused by a course of treatment sufficiently reckless to warrant a conviction of murder or manslaughter if the patient had died from it, there may be a conviction for assault and battery.

It should be remembered that in all criminal proceedings the offense charged must be proved beyond a reasonable doubt. Remedies are penal, with a view to punishing and deterring such conduct. In every instance, the state occupies the role of plaintiff, for the injury is to society.

The leading American case is that of *Commonwealth* v. *Pierce* (Supreme Judicial Court of Mass., 1884) 138 Mass. 165. Pierce, a practicing physician, was indicted for manslaughter for allegedly causing the death of his patient, Mary Bemis. Pierce had been in attendance as her physician since Dec. 29, 1882. On Jan. 7, 1883, she became very sick and was confined to her bed. Pierce prescribed the application to a large part of her body of kerosene-soaked flannels, which were to be renewed every three hours. He never applied them himself, leaving this to her husband and attendants. The patient consented to the treatment, which was continued until January 14, when the defendant was discharged and other physicians called. On January 16 she died of burns, blisters and suppurating sores extending over two thirds of her body. Neither the averments of the state's indictment or the proof offered showed that the defendant knew of the dangers of kerosene so applied or that he acted with evil intent. The trial court refused to give rulings, requiring these for conviction, as well as a requested charge that "the defendant cannot be convicted under this indictment, if the death resulted from any degree of ignorance on his part, if he was acting with the purpose to cure or benefit the patient." Instead, the trial judge instructed the jury as follows: "Injurious acts resulting from gross carelessness or foolhardy presumption, without intent to injure, may constitute an assault. If persons who are engaged in operating steam engines are guilty of gross carelessness or foolhardy presumption, and injuries result, they are criminally liable. So, with apothecaries, if a person without knowledge and skill deals with deadly drugs, he may be guilty of gross carelessness amounting to presumption, and be criminally liable. Whenever men are called upon to act with dangerous agencies, the law holds them to some degree of criminal responsibility. If they are grossly careless, or reckless and presumptuous, they are guilty. The same general principle applies to medical treatment. The government must show, not merely the absence of ordinary care, but gross carelessness amounting to recklessness. A man is not to be convicted of manslaughter merely because of his ignorance. His ignorance is only important as bearing upon the question whether his conduct in the care and treatment of the patient was marked by foolhardy presumption or gross and reckless carelessness. The defendant in this case is to be tried by no other or higher standard of skill or learning than that which he necessarily assumed in treating her; that is, that he was able to do so, without gross recklessness or foolhardy presumption in undertaking it. It is not necessary to show an evil intent; if, by gross and reckless negligence, he caused the death, he is guilty of culpable homicide. The question is whether the kerosene (if it was the cause of death), either in its original application, renewal, or continuance, was applied as the result of foolhardy presumption or gross negligence on the part of the defendant." [4]

4. From a conviction, the defendant appealed, complaining that the indictment and charge were deficient in the respects previously mentioned.

Mr. Justice Holmes, in a learned opinion affirming the conviction, approved the foregoing charge of the trial court. He said, among other things:

"More specifically, the questions raised by the foregoing request and rulings are whether an actual good intent and the expectation of good results are an absolute justification of acts, however foolhardy they may be if judged by the external standard supposed, and whether the defendant's ignorance of the tendencies of kerosene administered as it was will excuse the administration of it.

"So far as civil liability is concerned, at least, it is very clear that what we have called the external standard would be applied, and that, if a man's conduct is such as would be reckless in a man of ordinary prudence, it is reckless in him. Unless he can bring himself within some broadly defined exception to general rules, the law deliberately leaves his idiosyncrasies out of account, and peremptorily assumes that he has as much capacity to judge and to foresee consequences as a man of ordinary prudence would have in the same situation. In the language of Tindal, C. J., 'Instead, therefore, of saying that the liability for negligence should be coextensive with the judgment of each individual, which would be as variable as the length of the foot of each individual, we ought rather to adhere to the rule which requires in all cases a regard to caution such as a man of ordinary prudence should observe.' *Vaughan* v. *Menlove, 3 Bing. N. C.* 468, 475; S. C. 4 Scott, 244 (English).

". . . If a physician is not less liable for reckless conduct than other people, it is clear, in the light of admitted principle and the later Massachusetts cases, that the recklessness of the criminal no less than that of the civil law must be tested by what we have called an external standard.

". . . We admit that, if the thing is generally supposed to be universally harmless, and only a specialist would foresee that in a given case

*(Continued on next page)*

EQUITY:

The enormously important contact of equity with medical practice lies in the possibility of using the injunction to stop improper practice. Exactly what circumstances warrant the grant of this drastic remedy is important enough to merit detailed consideration in an independent paper. Here, consideration must be confined to some of the more salient principles.

In each new controversy, one will do well to answer the following questions in attempting to decide whether an injunction will be granted.

A. What is the exact nature of the controversy in terms of the parties involved and the objectives sought to be gained?

1. If the aggrieved person is a patient already injured by the defendant's malpractice, the proper remedy is a civil action at law for compensatory damages. The injunction is peculiarly useful and finds its fit application in preventing future wrongs or breaking up some repeated chain of wrongful acts. Accordingly, in case of the typical malpractice claim, the remedy at law is adequate, and equity will decline jurisdiction; the dereliction is past rather than prospective, and the injunction is wholly inapt.

2. If the moving complainant is a physician who seeks by injunction to restrain what he considers improper medical practice by the defendant, one meets at once the question of what basis of equitable jurisdiction can be made out.

The early and rather misleading case of *Merz* v. *Murchison* (6th Circuit Court, Ohio, 1908), 30 Circuit Court Reports, 646, in some quarters has created unfortunate confusion and doubt as to the power of equity to intervene by injunction. In that case the facts were as follows: the plaintiff, X, a licensed physician and surgeon, sought to enjoin alleged unlawful and unfair competition by the defendant, Y, a chiropractor who had no license under the medical practice act of Ohio. The evidence showed that Y was under indictment in a proceeding by the state for alleged violation of the statute.

The court held that the plaintiff's bill for an injunction must be dismissed because he could not show a property right invaded or any intent under the medical practice act to vest rights of action in private physicians. The court said:

"There appears to be no serious contention by counsel for plaintiff but that his claim to the equitable interposition of this court is based mainly, if not wholly, upon this statute. Without legal provisions for the examination and licensing of physicians and surgeons, one person would be as free as another to practice these professions without interference from the courts.

"A court will not interfere with the practice of medicine or surgery by one person on the petition of another, merely because such practice is unskilful and patients may be injured rather than benefited thereby, nor because the patients are deceived by false claims of skill.

"The plaintiff relies on what he earnestly urges is a property right to practice medicine and surgery conferred on him by his statutory license, and an interference with that property right by the unlawful competition of a person unlicensed.

"Probably the statute rather qualifies rights heretofore existing than confers new ones. . . . The circle of competition may be narrowed by excluding unlicensed competitors, but that is not the purpose of the law.

"The statute, which is designed to protect the public, contains certain penal provisions in behalf of the public. Can a private individual invoke it in his own behalf and in a civil proceeding prevent the very acts which the statute makes criminal?

"We quote this language from an opinion by Lord Mansfield, 2 Burr. 803: 'The rule is certain that where a statute creates a new offense, by prohibiting and making unlawful anything that was lawful before; and appoints a specific remedy against such new offense (not antecedently unlawful) by a particular method of proceeding, this must be pursued and no other.' . . . It is the judgment of the court that plaintiff's petition be dismissed."

But note: this decision does not preclude the right of one practitioner to enjoin acts of another which constitute torts under the established principles of unfair competition, without necessary reliance on infringement of a medical practice act—such, for instance, as when Y initiates a campaign to wean away X's patients by fraudulent statements or devices or by certain types of simulation endeavors to confuse the public into believing he is X and thus to exploit X's good will by diverting patients from their intended destination. Such "simulation" cases are not so apt to arise in respect to professional practice as in commercial activities in which complaints have given rise to lively litigation of large volume.

The fact is that the individual practitioner's right to injunctive relief depends on the necessary proof of some economic interest in the nature of a property right which has been infringed by conduct amounting to unfair competition.

To redress unfair competition, equity traditionally has been prone to require proof of such a property right, and the question at once presented is whether the license of a physician fills such requirements. In the Merz case, and indeed in a minority of more recent decisions from a small number of states (for example, *Drummond* v. *Rowe*, Supreme Court of Appeals of Virginia, 1931, 156 S. E. 442), the view is taken that licensing statutes are for the exclusive benefit of the public and confer no vested interest on the licensee sufficient to give him standing in equity. In this initial problem of arriving at the "statutory intent," the majority view and more acceptable construction is that licensure statutes have a dual purpose: to protect the public against incompetent practitioners and to protect qualified practitioners from the economic inroads of unlicensed competitors. According to the majority view, then, the license confers on the holder a franchise in the nature of a property right which equity has jurisdiction to protect.

Indeed, the authority of the Merz case has been impaired, if not altogether destroyed, by the recent case of *Dworken* v. *Apartment House Owner's Ass'n of Cleveland* (Court of Appeals of Ohio) 1931, 176 N. E. 577. In this case it was held that a license to practice law is an exclusive, valuable privilege sufficient to enable an attorney, proceeding by a "class bill" for himself and all other attorneys, to secure the equitable relief of injunction to protect his quasiproperty right from encroachment by the unlicensed practice of the corporate defendant.

In the Merz case, which the court distinguishes, the plaintiff sued for himself alone and did not prove that the unlicensed defendant attracted clients which otherwise would have resorted to him.

The difficulty of showing that the improper practice has prevented a patient from resorting to the particular plaintiff is met by bringing a "class bill" in equity in which the plaintiff seeks the injunction for himself and for other physicians similarly situated.

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*(Footnote 4 continued)*
it would do damage, a person who did not foresee it, and who had no warning, would not be held liable for the harm. If men were held answerable for everything they did which was dangerous in fact, they would be held for all their acts from which harm in fact ensued. The use of the thing must be dangerous according to common experience, at least to the extent that there is a manifest and appreciable chance of harm from what is done, in view either of the actor's knowledge or of his conscious ignorance. And therefore, again, if the danger is due to the specific tendencies of the individual thing, and is not characteristic of the class to which it belongs, which seems to have been the view of the common law in regard to bulls, for instance, a person to be made liable must have notice of some past experience, or, as is commonly said, 'of the quality of his beast.' 1 Hale P. C. 430. But if the dangers are characteristic of the class according to common experience, then he who uses an article of the class upon another cannot escape on the ground that he had less than the common experience. Common experience is necessary to the man of ordinary prudence, and a man who assumes to act as the defendant did must have it at his peril. When the jury are asked whether a stick of a certain size was a deadly weapon, they are not asked further whether the defendant knew that it was so. It is enough that he used and saw it such as it was. . . . So here. The defendant knew that he was using kerosene. The jury have found that it was applied as the result of foolhardy presumption or gross negligence and that is enough.

". . . The remaining questions may be disposed of more shortly. When the defendant applied kerosene to the person of the deceased in a way which they have found to have been reckless, or in other words, seriously and unreasonably endangering life according to common experience, he did an act which his patient could not justify by her consent, and which therefore was an assault notwithstanding that consent. *Commonwealth* v. *Collberg*, 119 Mass. 350. See *Commonwealth* v. *Mink*, 123 Mass. 422, 425. It is unnecessary to rely on the principle of *Commonwealth* v. *Stratton*, 114 Mass. 303, that fraud may destroy the effect of consent, although evidently the consent in this case was based on the express or implied representations of the defendant concerning his experience.

". . . As we have intimated above, an allegation that the defendant knew of the deadly tendency of the kerosene was not only unnecessary, but improper. *Regina* v. *Packard*, C&M 236. An allegation that the kerosene was of a dangerous tendency is superfluous, although similar allegations are often inserted in indictments, it being enough to allege the assault, and that death did in fact result from it. Exceptions overruled."

As the Supreme Court of Appeals of West Virginia said in *Sloan* v. *Mitchell*, 1933, 168 S. E. 800:

"The right of a licensed physician and surgeon to practice his profession is a valuable franchise in the nature of a property right to protect which he may sue in equity in the interest of himself and other physicians similarly situated, to enjoin a person from encroaching upon said right by engaging in the practice of medicine and surgery without a state license.

"A court is not powerless to prevent the doing of an act involving encroachment upon valuable franchise rights of others merely because such conduct is denounced as a public offense."

This right of the licensed practitioner, springing from concepts of unfair competition, to be protected in equity logically is limited to such conduct as represents an improper or unlawful diversion of patronage, as when the defendant unlawfully because unlicensed, takes economic benefits from the pool of medical practice (*Sloan* v. *Mitchell*, supra) or advertises, contrary to law, as in *Eisensmith* v. *Buhl Optical Company* (Supreme Court of Appeals, W. Va.) 1934, 178 S. E. 695 or permits himself to be used to put corporations or other unqualified persons directly or indirectly in competition with individual practitioners, as in *Ezell* v. *Ritholz* (Supreme Court of South Carolina) 1938, 198 S. E. 419.

When patronage has been rightfully procured and the defendant inflicts injury by negligent diagnosis or treatment, the patient has his proper remedy by a civil action for damages resulting from the malpractice; fellow physicians have no standing to secure an injunction because no unfair competition is involved.

When, however, a licensed physician uses an unlawful mode of practice to divert patronage from his competitors, a very different case may arise. Thus, when pregnant women are induced by known practices of a licensed physician to resort to him for abortions without therapeutic cause, the economic interest of respectable obstetricians in the same community in procuring normal deliveries at term is infringed, unfair competition exists and the affected physicians are entitled to proceed in equity by a class bill for injunctive relief.

By the sounder view, now entertained by a majority of courts, in all the situations discussed in this section the existence of penal statutes carrying penalties which might be invoked by criminal prosecutions will not defeat the equitable jurisdiction provided the plaintiffs show in their bill that the legal remedies so provided are inadequate to protect their interests and break up the wrongful conduct (*Ezell* v. *Ritholz*, supra). In this respect, there is a growing tendency to depart from the holding of the Merz case that the creation of a specific criminal law remedy against unlicensed practice by implication excludes resort to any other remedies.

To summarize:

(1) Suits in equity by individual practitioners for injunctions against improper practice depend essentially on a showing of unfair competition. They should therefore be brought by active practitioners in the same community engaged in such field of practice or specialty as makes it clear that the improper practice of defendant impinges on their economic interests.

(2) Such a suit should be in the form of a "class bill" for the benefit of the plaintiff himself and of all physicians similarly situated. Such suits in some states may properly be brought by medical societies or state medical boards when a valid authorization by individual practitioners or by statute constitutes them the "class" representative.

(3) When unfair competition can be shown, it is no necessary part of the plaintiff's proof that the defendant's conduct constitutes malpractice in respect to the patients treated. He need not show that the treatment was ignorant, unskilful or negligent, for in this type of case he does not derive his rights of action through the patient.

(4) Lacking the essential elements of unfair competition necessary to show unfair or unlawful diversion of patronage, the mere fact that the defendant's conduct was ignorant, unskilful or negligent so as to confer rights of action on his patients for injuries received in the course of treatment will not create equitable rights in fellow physicians.

3. If the moving complainant is the state, which seeks by a bill in equity to enjoin improper or unlawful practice by defendant, the basis of jurisdiction is different.

Logically, unless authorized to do so by express statute, the attorney general is not the proper plaintiff to protect the private property rights of individual practitioners against unfair competition. But he is usually the proper person to bring a bill on behalf of the state.

The state makes out its title to equitable relief by virtue of its sovereign interest in protecting the health and welfare of its citizens. Historically, equity has always exercised jurisdiction in proper cases to abate a public nuisance by issuing prohibitory injunctions. The more alert courts have hastened to press this doctrine into service in the present connection. Since equity abated nuisances at common law and since in equity there was no right to jury trial, this adequately meets the protest that the defendant is entitled to have the state restricted to a criminal prosecution under the penal provisions of licensure statutes in order to preserve his right to trial by jury.

Without completely exhausting the subject, the salient principles which should control the position of the state may be summarized as follows:

(1) The title of the state to injunctive relief against improper or unlawful practice rests on its right to protect public health, morals, safety and the collective welfare, rather than on the necessary showing of an invaded property right.

As Chief Justice Crane, of the New York Court of Appeals, said in *People* v. *Laman* (Court of Appeals, N. Y.) 1938, 14 N. E. (2d) 439, a suit by the attorney general to enjoin Laman from practicing medicine unlawfully, without a license:

"Although invasion of property rights or pecuniary interests is emphasized in some of the earlier cases as a basis for equitable interference, there appeared later a recognition that public health, morals, safety, and welfare of the community equally required protection from irreparable injury."

(2) Of the several theories advanced to sustain the state's title to equitable relief, the most satisfactory is that which proceeds on the theory that a continuing unlawful practice by the defendant may constitute a public nuisance which the state may abate by injunction in equity.

A few courts have gone so far as to hold that mere practice without a license is a nuisance in itself, without necessity of showing that the unqualified practitioner is so incompetent that his practice imperils the health of those he treats (*Kentucky State Board of Dental Examiners* v. *Payne* [Court of Appeals of Kentucky, 1926] 281 S. W. 188; *State* v. *Anderson*, 6 Tenn. Civ. App. 1). This view is unsound, for at common law, before the passage of licensure statutes, such practice was no nuisance; and in proceeding on the common law theory of public nuisance rather than by criminal law indictment under the licensure statute the state must show actual or imminent danger to the public. It is so held by the majority view.

As Chief Justice Ross said in State ex rel. La Prade, *Atty. General* v. *Smith* (Arizona Supreme Court) 1934, 29 Pacific (2d) 718:

"The practice of medicine and surgery is not per se a nuisance. A license does not add to one's qualifications. It only shows that the holder thereof has complied with the law. His skill and ability as a practitioner would be the same before as after he secured the license. Of course, one having a license from the proper authorities would be presumed to be qualified to practice, and, in a criminal prosecution for violating the law requiring a license before practicing, the absence of such a license would give rise to an unrebuttable presumption of disqualification. But in a proceeding of this kind, based upon acts alleged to be injurious to health by reason of unskilfulness, ignorance, and incompetency, it is incumbent upon the state to make out its case," (Accord: *People* v. *Laman* (Court of Appeals, N. Y.) 1938, 14 N. E. (2d) 439.

Thus, the right of the state to enjoin unlawful practice derives from a necessary showing of actual or prospective injury to patients from the ministrations of an incompetent defendant. The burden of proof is both greater and different than that which rests on the individual practitioner. The right of the latter to an injunction depends on the protection of his quasi-property right against the wrongful invasion of unfair competition, a tort in which injury to the patient is no necessary ingredient.

(3) In a majority of jurisdictions where the question has arisen, the state has been permitted to restrain unlicensed practice through the exercise of ordinary equity jurisdiction over public nuisances, without specific statutory authority so to proceed (*People* v. *Laman*, supra, and cases cited). In a limited number of jurisdictions, courts have been inclined to restrict the state exclusively to proceeding criminally against the unlicensed physician, on the ground that the penal provisions of the licensure acts impliedly negative the right to use any other sanction (*Dean* v. *State* [Supreme Court of Georgia], 1921, 106 S. E. 792). Most of these decisions can be explained on other grounds, as for instance, the failure of plaintiff in the Dean case to prove the harmful character of the defendant's practice.

The better view holds that the existence of penal sanctions against unlicensed practice does not oust the jurisdiction of equity to grant an injunction provided it is shown that the legal remedy is actually inadequate. This has been well expressed by Chief Justice Crane in *People* v. *Laman* (Court of Appeals, N. Y.), supra, as follows:

"We have pointed out that the fact a criminal penalty has been imposed for the performance of such acts will not deprive equity of its jurisdiction. In equity the court will consider the criminality of the act only to determine whether, under the particular circumstances, equitable intervention is necessary to give adequate protection to the interest invaded, or whether justice will be best served by relegating the parties to the criminal court. It is not every violation of a statute, even of the statute under consideration, that calls for equitable interference. But where, as here, it is made to appear as a fact that real danger is threatened to the public health by the conduct of the defendant, that irreparable damage to the health of individuals is likely to result, and that criminal prosecution, even if successful, will not give adequate protection to those in danger, a proper case for injunction has been made out.

"As heretofore pointed out, equity interferes, in a proper case, not to punish the individual for his past acts, but to afford more complete protection to the complaining party by enjoining unlawful acts in the future."

B. Has the state legislature, by positive enactment, increased or diminished the inherent equitable jurisdiction of the courts or specified who shall have standing as a party plaintiff to protect private or public medical interests?

The state legislature has the power to alter the scope of equitable remedies in the directions mentioned. Even in jurisdictions where the state is now denied injunctive relief against unlicensed practice, the remedy could be conferred at once by a proper legislative act.

Similarly, many suits for injunction have failed because under proper interpretation of state statutes the bill for injunction was filed by a plaintiff without the right to sue. (See *Bentley* v. *State Board of Medical Examiners* [Supreme Court of Georgia, 1922], 111 S. E. 379, in which it was held that the statute creating the State Board of Medical Examiners did not expressly or impliedly confer authority on it to proceed in equity for cancellation of a forged license or for an injunction to restrain unauthorized practice.)

In conclusion, equitable remedies have little scope in redressing rights of a patient who has been injured by medical malpractice; to protect the private economic interests of one practitioner against the unfair competition of another, however, equity will grant the powerful remedy of injunction in appropriate cases; and to protect the public as a group from the irreparable injury of incompetent practice by an unlicensed person, equity will likewise grant injunctive relief on the entirely different principle of abating a public nuisance.

It is important to realize that only a small fraction of the complex relations of man to man and of man to property is dealt with by the constitutions, state and federal, and by statutory enactments. The large residue falls within the sphere of "judge-made" law, which is civil, criminal or equitable according to the nature of the transaction. Preserved, published decisions of appeal courts handed down in the same jurisdictions, in absence of positive enactments, control the litigated question with practically "imperative" authority; such decisions from other jurisdictions are looked to for their advisory value when the question is a novel one. If a trial judge goes against the express precedents laid down by the highest appeal court of his jurisdiction, he may be bold, but he is courting reversal of his judgment and blemish of his judicial record for correct rulings. This fact tends to make of trial judges discreet administrators of settled law. They have the intrinsic power wielded by their brethren of the highest court of appeal, to break with precedent, establish a new principle or declare a statute invalid because unconstitutional. They may openly forsake an old rule in favor of a new one more agreeable to their sense of reason. Yet, as a practical matter, trial judges prefer the security of "settled law," buttressed by precedent, to the risk of reversal. By tacit consent, the delightful exercise of the judicial process to make new law by extending existing doctrines or by departing old dogma is left to the learned court "upstairs," which molds with impunity. Even these highest tribunals, the supreme courts of the several states and of the United States, do not often or readily depart suddenly from the precedent—supported, fundamental trends which protect values congenial to the existing social order.

It is true that the "common law" of which I speak is a system largely self contained and with certain limitations. If it were the only source of law, some of these limitations would make the whole legal system inadequate. More than once a distinguished jurist has given an anemic principle a transfusion of the rich blood of his own genius and enabled it to outlast its natural life. Like a patient with long-standing leukemia, but less justifiably, an ailing legal principle may thus live many years beyond the day of its expected doom.

In large measure, the common law is an introvert despite its occasional effort to appear an extrovert. Judges are house bound. The court, by tradition, is a passive hearer of disputes rather than an investigator of reality. It bids the litigants to bring their irreconcilable disputes to the court house, and by a device of allocating the burden of proof and imposing rules of diligence, it gets the conflicting versions of the parties before it. This practice of making a litigant father his own case may work fairly well so far as an individual dispute goes. But it does not always provide impartial scientific information for proper construction of those legal principles brought into being to enforce or advance a public policy. This is particularly true when the policy itself is not a self-evident interest open to intuitive ascertainment by the quick witted but depends on complicated economic or social facts which need scientific inquiry for their proper exploration. Such formulations are more apt to satisfy when they depend on moral or equitable considerations, for then they may have a surer point of reference. When the rule regulates morally neutral economic or social transactions according to some supposed "public policy," intuition is a less satisfactory point of reference, and the likelihood of error increases. A misconception as to what is sound "policy" may arise, or in advancing a correctly ascertained policy the common law may err in supposing that a certain doctrine will achieve that goal. A judge has no satisfactory official means of discovering the scientific workings of a given rule of law on the body social, particularly in advance of making his rule or extending an old one. He has nothing similar to the medical five or ten year follow-up to see whether a new treatment has the beneficial operation that was hoped for. This

lack of equipment is in part due to the fact that under the philosophy of "division of powers" into judicial, executive and legislative the courts are not intended to function as lawmakers and their actual activity in this sphere is a sub rosa exercise of legislative powers. Secondly, jurisprudence in the United States depends mostly on uniform rules, abstractions one might say, applicable to large series of transactions and large groups of people, rather than on "individualized justice;" only in equity does this latter approach find much scope. Thirdly, the very rationale of "judge-made law" developed at an age when intuitive thinking and exploration of the subjective was an accepted approach and the objective scientific method was but slightly developed.

Thus, the common law has large motor powers, moves with confidence in the external world and yet is singularly lacking in afferent neurones of its own. Perhaps these very self limitations of the judicial system afford some warrant for the extreme reluctance of courts to forsake the ruts of a well traveled road for the smoothness of dimly lighted byways.

Yet, in fairness, one must not judge the common law too quickly or draw inapt comparisons with science. The bric-a-brac or external indicia of "civilization" change more than do the fundamental relationships of man to man, which the law primarily regulates. Today a pedestrian may be run down by a negligent bus driver, while in the days of the Romans he was injured by a negligent archer shooting arrows in a public place. Both wrongs are torts. Today one buys and sells automobiles, while the Romans trafficked in chariots, but both sets of transactions involve the concepts of bargain and sale. Thus, legal concepts are more fundamental and permanent than the objects which they control. The law has been canny enough to keep many of its formulas broad and automatically responsive to changes in social standards. For instance, in the law of negligence, the required "due care" exacted from the actor bespeaks no rigid definition but calls for that degree of care which an average prudent man would have exercised in similar circumstances, taking into account the time and the place.

The very inversion of the common law has helped it achieve a considerable symmetry and harmony among those parts which in logic should have similar treatment. It is not static; over long periods it exhibits conservative but substantial growth. This forward look is helped by the constant ascent of new jurists to the bench, especially those men of large caliber who bring to it a keen knowledge of practical affairs. That the trial judges are conformists and that even the supreme court judges are timid innovators is not wholly to be regretted. A definite and certain rule which is only moderately good but is uniformly applied is generally preferable to a constantly changing, unpredictable rule which professes to be superior. The transactions of society are so complex that predictability has a high value, and the great bulk of law practiced outside the courthouse would lose its prophylactic usages if this certainty were destroyed. Stability of law, security of transactions and the knowledge aforehand of the legal effect of long term undertakings are valued interests of the average citizen.

Therefore, one should not compare the common law to a sulky horse unwilling to pace but should liken it to a watchdog set to guard the gate. It is not so much an initiator of new modes of thought as a powerful preserver of the established order.

It is more the proper sphere of the courts to act as custodians of the law, evolve it gradually with smooth transitions and settle disputes by reasonably certain standards, than to invade too boldly the realm of social reform under the guise of the judicial process.

More efficient means exist for breaking an outworn tradition than reliance on appeal courts. At common law, an injured man could not recover against his employer if he was hurt through the negligence of a fellow employee. No judge would have departed from this principle which such massive precedent had enshrined. Yet the whole creed, with its related doctrines, was swept away by statutory enactment of the workmen's compensation acts. Thus, in legislation one finds the instrument to break bonds with the outworn, to fill defects and to set up a new good. This new value the common law courts will then as doggedly preserve as they did the old doctrine. Constitutional prohibitions serve as a brake on too enthusiastic and radical statutory change which might ill advisedly sweep away important individual liberties. This legislative function belongs to all but is exercised by those who show initiative. In this fact lies a chance for physicians, by vigorously supporting new constructive legislation, to bring science to the aid of law and also to affect the social implications attaching to their profession.

One might say that common law, based on past experience guided by reason, makes society conform to its tenets. By legislation, a dissatisfied society makes law conform to it. When this antithesis is properly maintained, the good in law is preserved and the bad extirpated by planned legislation at one major operation, much as a surgeon amputates a gangrenous leg.

In administrative agencies (such as the Interstate Commerce Commission, which regulates public carriers; the Board of Tax Appeals; the Patent Office; the Labor Relations Board and the Securities Exchange Commission) expert boards are used to surmount the jury "blindspot" for technical evidence. These administrative bodies wield quasijudicial powers and take over the jury role of fact finding. Great speed is introduced, and legal formalities are reduced to a minimum. Yet there is some slight loss of the impressive certainty and predictability of the common law so far as the quasijudicial rulings are concerned.

Correctly viewed, law must be taken as the summation of those integrated mechanisms by which lives are regulated and disputes settled.

Whether he is a lawyer or a layman, any one who has a question of law before him should ask:

1. Is it affected by the constitution (state or federal), that is, the supreme law?

2. Is it dealt with by statute, and if so, what are the provisions of the act? Are these constitutional? How have the common law courts interpreted the language used?

3. If there is no statute, the question must be subject to common law. Is it a civil common law action for compensation, a criminal common law action by the state or a proceeding in equity? What is the current law in the particular jurisdiction as established by the preserved decisions and supporting opinions of the appeal courts?

Again, one must not confuse substantive law with adjective law. The latter deals with matters of procedure, mode of trial and rules of evidence directed to carrying the former into effect. Existing defects in respect to the law of medical malpractice lie more in

these mechanisms of proof making and fact ascertainment in scientific disputes. Part of the trouble lies in the existing rules of evidence and part in the broad constitutional guaranties of the right to trial by jury. These uniformly apply, without differentiation, to all disputed questions of fact, even when they arise on scientific evidence too technical for a lay jury to appraise. One should remain aware that the body of law under consideration is almost wholly common law in origin, that it can be effectually changed only by intelligent legislation directed toward mode of trial and that constitutional guaranties touching on evidence and right to jury trial must be reckoned with in proposed modifications.

With this brief, but necessary, excursion finished, it is possible to turn again to the main theme of this study.

[ED. NOTE.—This is the second of a series of six articles on "Legal Responsibility for Medical Malpractice." The remaining articles in the series will be published in early issues of THE JOURNAL.]

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# Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING CHAPTER, WHICH IS THE SEVENTH OF A SERIES ON AMPUTATIONS AND ARTIFICIAL LIMBS TO APPEAR IN THIS COLUMN. WHEN COMPLETED, THE SERIES WILL BE PUBLISHED IN THE FORM OF A HANDBOOK ON AMPUTATIONS. THE COUNCIL WISHES TO EXPRESS ITS APPRECIATION FOR THE COOPERATION OF ITS GROUP OF CONSULTANTS ON ARTIFICIAL LIMBS. THE COUNCIL IS REPRESENTED BY DRS. FRANK D. DICKSON, HARRY E. MOCK, FRANK R. OBER, S. PERRY ROGERS, PAUL STEELE AND PHILIP WILSON, AND THE ASSOCIATION OF LIMB MANUFACTURERS OF AMERICA IS REPRESENTED BY MESSRS. MCCARTHY HANGER SR., W. E. ISLE, JOSEPH A. SPIEVAK, DAVID E. STOLPE AND J. B. KORRADY.

HOWARD A. CARTER, Secretary.

## CHAPTER V.

### AMPUTATION IN CONGENITAL AND CHRONIC DISABILITIES

Almost every community contains one or more persons severely crippled by chronic disability, either congenital or acquired, who would be happier, healthier, more useful citizens if relieved of parts of one or more extremities by judicious amputation. A few of these individuals will be found to have refused amputation because of religious or superstitious prejudice against giving up any part of their natural bodies. Others have requested amputation and been refused. In many instances amputation has never been seriously considered as a method of reconstruction and rehabilitation by either patient or surgeon.

The following general factors are to be considered in determining the advisability of amputation for the relief of chronic disability:

1. *Function.*—If one extremity is totally devoid of useful function, and if reconstructive surgery offers no hope of restoration of function, amputation of the entire extremity is usually indicated. A useless arm, if not painful, might be kept for its cosmetic value; but the function of artificial legs is so good that amputation, even by ablation of the entire extremity, should be urged.

2. *Pain.*—Severe pain, if otherwise incurable and if caused within the extremity, is a positive indication for amputation.

3. *Infection.*—Progressive or intractable infection affecting the health or threatening the life of the patient may demand amputation.

4. *Prognosis Following Other Treatment.*—A program of reconstruction involving multiple operations, braces and appliances should not be undertaken without a careful estimation of the result likely to be achieved. Will simple amputation of all or part of such an extremity offer a better prognosis in terms of appearance, comfort and function?

5. *Sites Available.*—Does a sufficient part of the extremity possess useful function to allow amputation at a site of election, with assurance that the remaining stump will function well in a prosthesis? Most chronic deformities are only partially disabling; their amputation is surgery of election. Advice to these patients requires a nice judgment and an awareness of the physiologic requirements described in chapter I. Will even an amputation of the entire extremity, fitted with a "tilting table" leg, provide better function than the disabled member?

6. *Braces.*—Does the patient now require an appliance more unwieldy, unsightly or uncomfortable than an artificial limb? After a proposed program of reconstructive surgery will he still require an appliance?

7. *Age.*—In the choice of procedures for the relief of disability from chronic disease or deformity of an extremity, the age of the patient may be a most important consideration. Children have time to spare. Intelligent reconstructive surgery counts on the assistance of the growth process in many instances. Conversely, the permanent health and function of a stump are better assured if amputation is performed after the growing period has ended.

8. *Economic Status.*—This consideration may be related to the previous one. An adult may choose amputation because he feels he cannot afford the time required for an alternate procedure. Furthermore, free hospital beds for crippled children are plentiful, while free orthopedic beds for adults are extremely scarce.

9. *Consultation.*—Do one or more competent consultants agree that amputation is the procedure of choice?

10. *Wishes of the Patient.*—In an astonishing number of instances the patient affected by a disabling, painful, chronic deformity goes from surgeon to surgeon begging for an amputation. Objection frequently comes from family and parents, who bear neither the pain nor the disability and who may enjoy their martyrdom in caring for the cripple. The wishes of the parents must be considered in the disposition of a minor child. With an adult, the surgeon need concern himself only that the patient understands what he may reasonably expect as a result and that he positively wants the amputation. The indications for amputation for the relief of chronic disability vary with the cause of the deformity. Similarly, limitations are sometimes imposed by the nature of the underlying pathologic condition. Etiologically, most cases will fall into one of four groups:

1. *Congenital Deformities.*—Supernumerary parts, digits or major portions of an extremity should be amputated, the earlier in life the better. Congenital amputations may be fitted with suitable prostheses in early childhood. Reamputation or reshaping of the stump may allow more satisfactory fitting and better function but should be delayed until the end of the growth period if possible. Congenital absence of long bones is a fairly common anomaly. Absence of the tibia results in a short fibula, which usually dislocates at its upper end. The bone becomes bowed and the foot falls into marked varus. The whole lower leg is unfit for weight bearing. If the parents refuse amputation until they are convinced that the outlook is hopeless, an adjustable walking Thomas splint may be worn until amputation is agreed on. Absence of the femur, partial or complete, presents a similar problem. Some modification of the ischial-bearing Thomas splint should be worn well into adolescence. If amputation then appears to be the best solution, a suitable length of bone and soft tissue will be available. Absences of either the radius or the ulna are susceptible to reconstructive surgery and bone grafts and seldom require amputation.

2. *Post-Traumatic Deformities.*—Angulation and overriding of long bones, malalinement of joint surfaces and ankylosis of joints are correctable by reconstructive surgery. Paralysis of part of the musculature and extensive loss of bone are not in themselves indications for amputation. Such conditions as inoperable anesthesia, chronic infection, massive loss of soft tissues and impairment of circulation tend to throw the balance in favor of amputation. Age is a factor here; reconstruction which could not succeed in an adult may be attempted in a child.

3. *Paralysis.*—Amputation is seldom indicated in cerebral palsy. In an exceptional case of monoplegia or hemiplegia the gait may be improved by amputation of an extremely spastic

and deformed lower extremity. The procedure is limited by the fact that such an extremity is affected in its entirety and must be removed in its entirety. In an occasional case of paralysis and deformity from anterior poliomyelitis, benefit may be derived from amputation. The ideal patient is the adult with extensive paralysis of one lower extremity, with severe deformity and shortening, yet with sufficient muscular control of the hip to motivate a good thigh stump. The number of these patients is limited by the rarity of a strong and stable hip in an extremity otherwise so deformed.

4. *Infection.*—Chronic pyogenic osteomyelitis or arthritis is an indication for amputation only when competent treatment over a long period has failed to effect, or to promise, a cure. Such cases are, unfortunately, common enough. An infection which impairs the health or threatens the life of its host is an absolute indication. The elective cases are limited by the availability of a favorable site for amputation through uninfected bone and soft tissues. The use of drugs of the sulfanilamide series before and after amputations should reduce the operative risk in these cases.

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## Council on Pharmacy and Chemistry

### BACTERIOPHAGE THERAPY: II.

IN 1934 THERE WAS PUBLISHED IN THE JOURNAL UNDER THE AUSPICES OF THE COUNCIL A SERIES OF ARTICLES ON THE STATUS OF BACTERIOPHAGE THERAPY, BY DRS. EATON AND BAYNE-JONES. RECENTLY THE COUNCIL FELT THAT SUBSEQUENT DEVELOPMENTS IN THIS FIELD MIGHT WARRANT A RESTUDY OF THIS SUBJECT. DR. A. P. KRUEGER, PROFESSOR OF BACTERIOLOGY AT THE UNIVERSITY OF CALIFORNIA AND HIS COLLEAGUE, DR. E. JANE SCRIBNER, KINDLY AGREED TO MAKE THE NECESSARY STUDY AND TO WRITE A REPORT. THEIR REPORT, WHICH FOLLOWS, HAS BEEN ADOPTED BY THE COUNCIL AND AUTHORIZED FOR PUBLICATION. IN AUTHORIZING THE PUBLICATION, THE COUNCIL EXPRESSES ITS GRATITUDE TO DRS. KRUEGER AND SCRIBNER FOR THEIR EXCELLENT STATUS REPORT.

OFFICE OF THE COUNCIL.

## THE BACTERIOPHAGE

### ITS NATURE AND ITS THERAPEUTIC USE

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There appeared in THE JOURNAL during December 1934 a series of articles on bacteriophage therapy by Drs. M. D. Eaton and Stanhope Bayne-Jones.[1] The phases of the subject covered included the experimentally determined facts relating to the bacteriophage phenomenon, the laboratory and clinical evidence for and against the therapeutic usefulness of bacteriophage and the role of so-called antivirus in crude lysates containing bacteriophage. The survey served most effectively as a timely basis for determining the status of commercial phage preparations. In the six years since the report of Eaton and Bayne-Jones was published, much more information about both phage itself and its clinical utility has accumulated; it has been thought advisable therefore to supplement their paper with an analysis of the recent literature, using as a background certain of their summarized material. We propose to consider the following subjects:

1. The nature of bacteriophage and its mode of action on bacteria.
2. The laboratory evidence regarding the therapeutic value of phage in experimental infections.
3. The clinical evidence for and against the usefulness of phage in treating infectious diseases.

From the Department of Bacteriology, University of California Medical School.

1. Eaton, M. D., and Bayne-Jones, Stanhope: Bacteriophage Therapy, J. A. M. A. **103:** 1769-1776 (Dec. 8), 1847-1853 (Dec. 15), 1934-1939 (Dec. 22) 1934.

It is not possible to abstract or discuss in this article all the papers that have been published on the subject, and we have selected only those that have seemed to us most significant.

### 1. THE NATURE OF BACTERIOPHAGE AND THE PHAGE-BACTERIUM REACTION

The phenomenon of bacteriophagy, as carried out under optimal conditions in vitro, is spectacular. One sees a turbid culture representing the accumulated product of several hours of bacterial growth suddenly clear and become sterile. A minute amount of the cleared culture added to a fresh inoculum of organisms in broth induces the same train of events. To early investigators this regeneration of the lytic principle signified at once that the latter was an animate material of some sort and d'Herelle built his entire theory of bacteriophage around the concept that it is a living ultramicrobe, parasitic on bacteria. Other workers developed their own extremely divergent theories, and claims to practically every likely possibility were made long before there existed sufficient factual evidence to arrive at a considered conclusion.

The past eight years has witnessed the gradual accumulation of enough fundamental data to answer with some finality a good many of the most important questions about phage and phage action. Such of this information as we feel has a bearing on the general problem of therapeutic application is summarized herewith:

1. Phage is a protein of high molecular weight.[2]
2. Under optimal conditions of temperature, $p_H$ and so on in the test tube the reaction between phage and the bacterial substrate displays the following characteristics (fig. 1):

(*a*) Bacterial reproduction follows the normal growth curve just as though no phage were present up to the time lysis (massive dissolution) of bacteria begins.[3]

(*b*) Phage production proceeds at a rate considerably faster than bacterial growth;[4] therefore the ratio of phage to bacteria in a given mixture is constantly rising, the great percentage of phage being attached to the cells.[5]

(*c*) When approximately 100 phage units per bacterium has accumulated (lytic threshold) lysis of bacteria occurs very rapidly.[6] For example, a densely turbid suspension containing 100 million cells per cubic centimeter will become crystal clear within one half hour. Lysis consists of actual cellular disruption[7] accompanied by hydrolytic cleavage of bacterial proteins in some instances.[8] Granular cellular débris may or may not remain after lysis has gone to completion depending on the nature of the organism lysed.[9]

2. Northrop, J. H.: Concentration and Partial Purification of Bacteriophage, Science **84:** 90-91 (July 21) 1936. Northrop, J. H.: Concentration and Purification of Bacteriophage, J. Gen. Physiol. **21:** 335-366 (Jan.) 1938. Krueger.[12]

3. Krueger, A. P., and Northrop, J. H.: The Kinetics of the Bacterium-Bacteriophage Reaction, J. Gen. Physiol. **14:** 223-254 (Nov.) 1930.

4. Krueger and Northrop.[3] Krueger and Fong.[10]

5. Krueger, A. P.: The Sorption of Bacteriophage by Living and Dead Susceptible Bacteria: Equilibrium Conditions, J. Gen. Physiol. **14:** 493-516 (March) 1931.

6. Northrop, J. H., and Krueger, A. P.: The Role of Intracellular Phage in Lysis of Susceptible Staphylococci, J. Gen. Physiol. **15:** 329 (Jan.) 1932. Krueger and Northrop.[3]

7. d'Herelle, Félix: Sur un microbe antagoniste des bacilles dysentériques, Compt. rend. Acad. d. sc. **165:** 373-375, 1917.

8. Bronfenbrenner, Jacques; Muckenfuss, R. S., and Hetler, D. M.: Study of Intimate Mechanism of the Lysis of Bacteria by Bacteriophage, Am. J. Path. **3:** 562-565, 1927. Hetler and Bronfenbrenner.[48] Northrop.[44]

9. Bronfenbrenner, Jacques: The Bacteriophage: Present Status of the Question of Its Nature and Mode of Action, in Jordan, E. O., and Falk, I. S.: The Newer Knowledge of Bacteriology and Immunology, Chicago, University of Chicago Press, 1928, chapter 40, p. 525; in Rivers, T. M.: Filtrable Viruses, Baltimore, Williams & Wilkins Company, 1928, p. 373. Bayne-Jones, Stanhope, and Sandholtzer, L. A.: Changes in Shape and Size of Bacterium Coli and Bacillus Megatherium Under Influence of Lysis: Bacteriophage—Motion, Photomicrographic Analysis of Mechanism, J. Exper. Med. **47:** 279-303 (Feb.) 1933.

Substances present in solution during growth of the bacteria may alter the lytic threshold materially. Thus 0.00016 molar manganous chloride reduces the phage-bacteria ratio requisite for lysis to 12 as compared with the normal figure of 100;[10] 0.125 molar sodium sulfate and 0.25 molar sodium chloride have just the opposite effect; they raise the ratio to 320 and 1,000 respectively.[11]

3. Phage is readily inactivated by a variety of chemical and physical agents.[12] Of particular significance in evaluating clinical usage is the inactivating effect of those products which occur in tissues as a constant part of the phenomenon of inflammation. It is known that blood serum, white cells, bacterial polysaccharides, whole dead bacteria, tissue débris and in fact colloidal suspensions of many sorts exert either a direct destructive action on phage or an indirect inhibitory effect on the interaction of phage and bacteria.

When injected into the body of man or animals, phage serves as an antigen, stimulating the tissues to produce antiphage.[13] This antibody, as its name implies, also neutralizes phage activity. Likewise, certain normal secretions such as the gastric juice or bile may serve as phage inactivators.

4. Phages exhibit decided limitations in the range of their activity; that is, no single phage is capable of lysing all organisms. Usually it is found that a particular phage will act on one group of bacteria but not on others; e. g., a coli phage will not lyse staphylococci. Even within the group for which it displays activity there occur resistant strains able to grow freely in concentrated phage solution. Apparently phage specificity is linked with the antigenic structure of the bacterial substrate; certain definite chemical components must be present on the cell surface for phage fixation to occur and if these materials are lacking this highly essential initial step in the phage-bacterium reaction cannot be consummated.

Besides having a wide distribution in nature, resistant micro-organisms may develop spontaneously from phage-susceptible forms in the course of the reaction between the latter and phage.[14] In this sense phage is a potent dissociating agent; it can readily split off from a parent bacterial strain daughter cells possessing entirely different structural, biochemical, pathogenic and immunologic characteristics, these alterations being reflected in such diverse and biologically important matters as colonial structure, fermentative capabilities and host invasiveness. Naturally it is to the host's advantage if phage-induced dissociation should result in the production of less pathogenic forms. This interesting possibility will be considered at some length later on.

5. The mechanism of phage formation during the reaction between phage and susceptible cells has been the subject of long controversy. d'Herelle and his followers[14] have held to the theory that phage is a living ultramicrobe parasitic on bacteria and as such develops by means of an independent metabolism at the expense of the host cell. The major opposition to this tenet has come from Bordet and his school,[15] who advanced the concept that phage is simply a unique by-product of bacterial metabolism possessing the curious property of destroying the cell which formed it. The accumulation of data with the passage of time has strengthened Bordet's stand.

The first accurate quantitative study of the kinetics of bacteriophagy[3] clearly implicated bacterial growth as an essential factor in phage production. If susceptible bacteria grew in the presence of phage, more phage was formed; when they ceased reproducing, phage formation came to a halt. This relationship was found to be so reliable that it could be stated in mathematical form, and equations were derived which accurately forecast all the major events of bacteriophagy. Nevertheless, more recent work[16] has proved that bacterial reproduction and phage formation are distinct reactions presenting the deceptive appearance of cause and effect only because they have nearly identical optimums. The rates of the two processes have been shown to have different $p_H$ and temperature maximums; by careful adjustment of these factors, conditions were obtained which inhibited cell division while permitting phage production. Similarly certain concentrations of sodium chloride or sodium sulfate,[11] in the medium induced

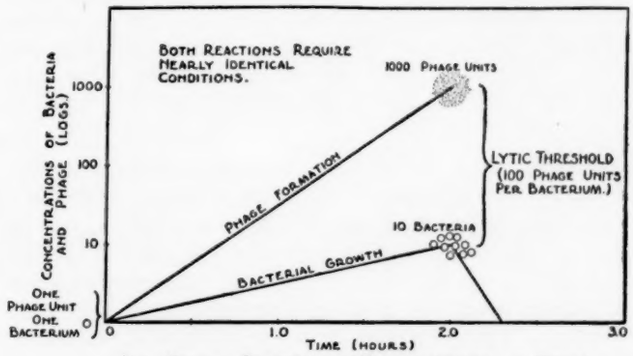


Fig. 1.—Phenomena that comprise bacteriophagy.

the cessation of bacterial reproduction without slowing down phage formation. These observations have been confirmed by Northrop[17] in the course of work on an entirely different phage and bacterium.

The fact is, then, that bacterial growth is not essential for the elaboration of phage, the two phenomena having an apparently intimate connection only because they require much the same milieu. Once established, this conclusion led away from attempts to involve some previously unsuspected aspect of bacterial growth as the prime conditioning factor for phage formation. It seemed reasonable to assume as a working hypothesis[18] that phage, itself a protein with many of the properties of an enzyme, is fabricated in much the same way that other enzymes are; namely, by the cellular synthesis of an inactive precursor which is later changed into the active form. A classic example among the enzymes is trypsinogen, developed by the pancreas in the inactive state and subsequently converted to the enzyme trypsin in the small bowel. Trypsinogen in solution can be

10. Krueger, A. P., and West, N. S.: The Accelerating Effect of Manganous Ions on Phage Action, J. Gen. Physiol. **19:** 75-86 (Sept.) 1935.

11. Krueger, A. P., and Strietmann, W. L.: Effect of Sodium Sulfate on the Phage-Bacterium Reaction, J. Gen. Physiol. **22:** 131-138 (Nov.) 1938. Scribner, E. Jane, and Krueger, A. P.: The Effect of NaCl on the Phage-Bacterium Reaction, ibid. **21:** 1-16 (Sept.) 1937.

12. Krueger, A. P.: The Nature of Bacteriophage and Its Mode of Action, Physiol. Rev. **16:** 129-172 (Jan.) 1936.

13. Bordet, J., and Ciuca, M.: Spécificité de l'autolyse microbienne transmissible, Compt. rend. Soc. de biol. **84:** 278, 1921.

14. d'Herelle, Félix: The Bacteriophage and Its Behavior, translated by G. H. Smith, Baltimore, Williams & Wilkins Company, 1926.

15. Bordet, J., and Ciuca, M.: Exudats leucocytaires et autolyse microbienne transmissible, Compt. rend. Soc. de biol. **83:** 1293-1295, 1920; Le bactériophage de d'Hérelle, sa production et son interprétation, ibid. **84:** 1296-1298, 1920.

16. Krueger, A. P., and Fong, J.: The Relationship Between Growth and Phage Production, J. Gen. Physiol. **21:** 137 (Nov.) 1937.

17. Northrop, J. H.: Increase in Bacteriophage and Gelatinase Concentration in Cultures of Bacillus Megatherium, J. Gen. Physiol. **23:** 59-79 (Sept.) 1939.

18. Krueger, A. P.: The Mechanism of Bacteriophage Production, Science **86:** 379-380 (Oct. 22) 1937. Krueger and Mundell.[21]

autocatalytically transformed into trypsin by the addition of a small amount of trypsin to it.[19]

Experimental search has brought to light satisfactory evidence that an analogous relationship exists in the production of phage. Traces of a substance which reacts with phage to form more phage have been detected in ultrafiltrates of bacterial cultures,[20] but the yields were so irregular that a totally different approach had to be evolved. This has taken the form of demonstrating phage precursor in "activated" bacteria;[21] i. e., cells which have completed a phase of rapid growth and subsequently have been brought to a resting state by storage in salt solution at low temperature. Such cells added to phage react with it extremely rapidly and within two minutes cause the phage titer to rise to levels as high as ten times the original value. The cellular component responsible for this increase in phage content [22] is very labile and can be inactivated by several chemicals such as iodoacetic acid and methylene blue in concentrations that are not lethal for the cells themselves.[23] The same thing holds for the heat inactivation of precursor; it proceeds at temperatures too low to injure the bacteria, and the rate of inactivation rises abruptly with small temperature increments. The latter fact is of considerable interest, for in general it is peculiarly characteristic of protein denaturation that small differences in temperature have such an enormous influence on the rate of reaction. The probability follows that phage precursor either contains a protein constituent or, as seems more likely, consists entirely of a protein.[24]

### 2. LABORATORY EVIDENCE REGARDING THERAPEUTIC VALUE OF PHAGE IN EXPERIMENTAL INFECTIONS

Phage preparations employed in the treatment of disease are far from being simple solutions of the lytic principle in water. As a matter of fact they contain varying proportions of all sorts of materials too complex to analyze accurately, such as constituents of mediums, the accumulated by-products of bacterial metabolism, substances released by lysis of the microbial substrate, and finally a small amount of phage (at the most 1 or 2 mg. per liter). Certainly the effects observed in infected animals and human beings following the injection of a crude lysate cannot be attributed to the phage content alone, for all the substances just noted are biologically active and are present in sufficient concentrations to be therapeutically significant. For convenience they may be classified in two groups:

A. Bacterial derivatives serving as antigens and stimulating the production of specific antibacterial immunity.

B. Medium proteins and peptones capable of initiating the common nonspecific protein shock reaction.

There are thus three major possibilities to be considered in analyzing the mechanism of such recoveries as may follow the injection of phage into infected hosts. The results conceivably may be due to cellular lysis in vivo, to specific immune phenomena, to nonspecific protein shock or to some combination of these three factors.

Because of the technical difficulties involved but few attempts have been made to treat infected animals or patients with purified phage, and the meager experimental data obtained have led to the conclusion that phage lysis of bacteria in tissues is on a very low level indeed, if it occurs at all. This is in accord with a

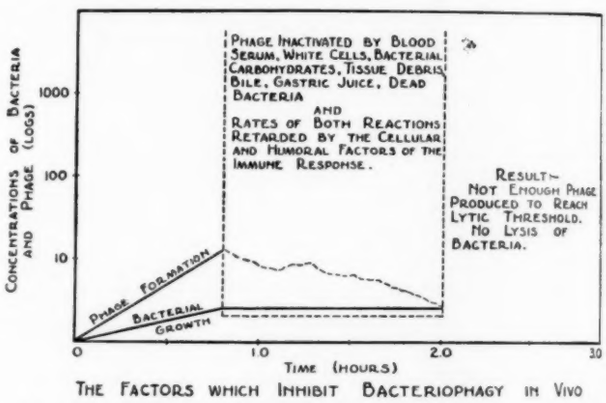
PHAGE INACTIVATED BY BLOOD SERUM, WHITE CELLS, BACTERIAL CARBOHYDRATES, TISSUE DEBRIS, BILE, GASTRIC JUICE, DEAD BACTERIA
AND
RATES OF BOTH REACTIONS RETARDED BY THE CELLULAR AND HUMORAL FACTORS OF THE IMMUNE RESPONSE.
RESULT—NOT ENOUGH PHAGE PRODUCED TO REACH LYTIC THRESHOLD. NO LYSIS OF BACTERIA.
CONCENTRATIONS OF BACTERIA AND PHAGE (LOGS)
1000
100
10
PHAGE FORMATION
BACTERIAL GROWTH
0
1.0
2.0
3.0
TIME (HOURS)
THE FACTORS WHICH INHIBIT BACTERIOPHAGY IN VIVO

Fig. 2.—Reasons for failure of lytic destruction of bacteria in tissues.

prediction now some ten years old based on observations of the phage-bacterium reaction in vitro.[25] Briefly the facts are these: For susceptible cells to undergo lytic destruction there must be available in the immediate environment sufficient phage to raise the phage-bacterium ratio above the critical lytic threshold. This relatively high concentration of phage can be attained theoretically by introducing enough phage directly into the infected area, e. g. a wound, or by injecting a few cubic centimeters into the body, depending on the circulation to convey the phage to the infected site, where, through contact with a susceptible bacterial population, it may develop into the amount required for lysis. There are, however, very real difficulties which stand in the way of realizing either desideratum. In the first place a good lysate contains a mere $1 \times 10^{10}$ or $1 \times 10^{11}$ phage units per cubic centimeter (0.001 mg. of phage protein), and even when large amounts are used topically in diseased areas its active strength is seriously reduced by the inactivating influence of nearly every element participating in the phenomenon of inflammation. Dead susceptible bacteria bind considerable quantities of phage and the adsorptive process is irreversible.[5] Similarly leukocytes and leukocytic

19. Northrop, J. H.: Crystalline Enzymes: The Chemistry of Pepsin, Trypsin and Bacteriophage, Columbia Biological Series, New York, Columbia University Press, 1939, no. 12.

20. Krueger, A. P., and Baldwin, D. M.: The Production of Bacteriophage in the Absence of Bacterial Cells, Proc. Soc. Exper. Biol. & Med. **37:** 393 (Nov.) 1937.

21. Krueger, A. P., and Mundell, J. H.: Demonstration of Phage Precursor in the Bacterial Cell, Science **88:** 550-551 (Dec. 9) 1938.

22. Krueger, A. P., and Scribner, E. Jane: Serial Production of Phage from Intracellular Phage Precursor, Proc. Soc. Exper. Biol. & Med. **40:** 51-56 (Jan.) 1939.

23. Krueger, A. P., and Scribner, E. Jane: Intracellular Phage Precursor, J. Gen. Physiol. **22:** 699-717 (July) 1939; Inactivation of Intracellular Phage Precursor by Iodoacetic Acid, Proc. Soc. Exper. Biol. & Med. **43:** 416-418 (Feb.) 1940. Krueger, A. P.; Scribner, E. Jane, and Mecracken, T.: The Photodynamic Inactivation of Phage Precursor by Methylene Blue, J. Gen. Physiol. **23:** 705-708 (July) 1940.

24. Krueger, A. P.; Mecracken, T., and Scribner, E. Jane: Heat Inactivation of Intracellular Phage Precursor, Proc. Soc. Exper. Biol. & Med. **40:** 573-576 (April) 1939.

Further information on recent nonclinical aspects of phage research may be found in:

Ellis, E. L., and Delbrück, M.: Growth of Bacteriophage, J. Gen. Physiol. **22:** 365-384 (Jan.) 1939.

Krueger, A. P., and Scribner, E. Jane: Effect of pH on Heat Inactivation of Bacteriophage, Proc. Soc. Exper. Biol. & Med. **33:** 21-23 (Oct.) 1935.

Krueger, A. P., and Mundell, J. H.: Reactivation of Thermally Inactivated Bacteriophage, ibid. **34:** 410-413 (May) 1936; Effect of Phage on Electrokinetic Potential of Susceptible Cells, ibid. **36:** 317-320 (April) 1937.

Krueger, A. P., and Elberg, S.: Reversible Inactivation of Phage by KCN, ibid. **31:** 483-485 (Jan.) 1934.

Krueger, A. P., and Baldwin, D. M.: The Reversible Inactivation of Bacteriophage by Bichloride of Mercury, J. Gen. Physiol. **17:** 499-505 (March) 1934; The Reversible Inactivation of Bacteriophage with Safranine, J. Infect. Dis. **57:** 207-211 (Sept.-Oct.) 1935.

Delbrück, M.: Adsorption of Bacteriophage Under Various Physiological Conditions of the Host, J. Gen. Physiol. **23:** 631-642 (May) 1940; The Growth of Bacteriophage and Lysis of the Host, ibid. **23:** 643-660 (May) 1940.

25. Manwaring, W. H., and Krueger, A. P.: Laboratory-Endorsed Therapeutic Agents, J. A. M. A. **93:** 95-96 (July 13) 1929; Limitation of Bacteriophage Therapy, editorial, ibid. **96:** 693 (Feb. 28) 1931.

extracts [26] are potent phage-inactivating agents. Blood serum,[27] the carbohydrate fractions of dead bacteria [28] and nonbacterial polysaccharides [29] all exert a pronounced inhibitory effect on bacteriophagy. It was thought for a time that only the carbohydrates from susceptible bacteria could interfere with phage action, but recent work [29] has proved that the polysaccharides of resistant strains may act just as powerfully.

The functional efficiency of phage, therefore, depends on the exact local situation obtaining in the infected tissue and, judging from quantitative experimental evidence, it would be remarkable if under average conditions more than $1 \times 10^7$ phage units in each cubic centimeter of the original lysate remained available for action on living organisms. Since the average lytic threshold appears to be in the neighborhood of 100 phage units/bacterium, the maximal number of bacteria which could be lysed by each cubic centimeter of phage preparation would be 100,000, a relatively small portion of the massive bacterial population involved in a serious wound infection. Should the bacterial content of the exudate be moderately greater than this, the nature of phage distribution among the organisms would operate to reduce to a negligible percentage the number of cells receiving enough phage for initiation of lysis. The practical functioning of these influences which keep the concentration of phage in an infected site at a very low level is reflected in the data of Jern, Howes and Meleney,[30] who followed the fate of phage introduced directly into localized staphylococcic infections in man. There was no evidence that phage multiplied in the infected areas; on the contrary, substances not specified by the authors inhibited phage action and greatly diminished the amount available in the lesions.

The possibility must be considered that the loss of phage incurred by the factors enumerated might be compensated for through local production of phage by the infecting organisms. It has been stressed already that the optimums for bacterial growth and phage formation are approximately the same,[31] and that the latter process can be dissociated from the former only by very careful regulation of experimental conditions. Ordinarily the effective elaboration of phage requires an environment that favors free bacterial growth. In tissues all the humoral and cellular elements of the host oppose the reproduction of the invader and it is difficult to see how any significant regeneration of phage could be expected to occur under these generally adverse circumstances. As a further detriment to the lytic destruction of bacteria even when phage is repeatedly applied, there ensues a continuous dilution of phage by plasma diffusing through the walls of small vessels in the inflamed area. This phenomenon involves more than physical dilution, for along with the fluid come new stores of the substances which inhibit bacteriophagy.

If topical treatment of infected tissues with phage is to follow established precepts, we may suppose that care will be exercised to preserve the infection-limiting reaction which normally develops at the periphery of the diseased site and that the use of excessive pressure will be avoided when the lysate is instilled. Certainly this is to the host's advantage; but if this condition is met there is no reason to assume extraordinary penetration of phage into the deeper tissues and it becomes unlikely that bacterial lysis is more than a remote possibility in anything except the very superficial areas.

The second means of utilizing phage presupposes that a small amount injected hypodermically anywhere in the body will eventually localize in the center of infection.[14] Such a concept completely disregards the known facts and implies a chemotactic affinity of fantastic proportions between phage and pathogen. To begin with, the dilution factor is huge; in an average individual receiving a dose of 2.0 cc. of phage, granted that the entire quantity reaches the blood stream, the actual concentration in the circulation could not be more than $4 \times 10^6$ phage units per cubic centimeter. This amount would be subject to two additional depleting influences; namely, the phage inactivating substances of the blood stream and the phagocytic capacity of the reticulo-endothelial system. The extent of the depletion is clearly shown in the experimental data of several workers, as for example those of Nungester and Watrous.[32] These investigators injected 2.0 cc. of staphylococcus phage intravenously into each of fifteen albino rats (a large dose corresponding approximately to 150 cc. for a human being). The initial phage titer was $5 \times 10^8$ phage units per cubic centimeter; in five minutes the blood titer was $2 \times 10^5$ phage units/cc. and in two hours only 40 phage units/cc. This means that immediately after the injection of phage the effective blood level is reduced to 0.04 per cent of the original concentration of the lysate. In two hours only one phage particle in ten million of the lysate injected remains in the blood stream. The reticulo-endothelial cells of the spleen and liver appear to function actively in the removal of phage from the circulation and thus prevent it from acting on blood-borne organisms. This clearing effect provides an explanation for the generally negative attempts to treat streptococcic and staphylococcic septicemias in experimental animals with phage.[33]

There is no doubt that these depleting factors operate under practical conditions and in our opinion help to

26. Evans, Alice C.: Inactivation of Antistreptococcus Bacteriophage by Animal Fluids, Pub. Health Rep. **48:** 411-426 (April 21) 1933. Colvin, M. G.: Behavior of Bacteriophage in Body Fluids and in Exudates, J. Infect. Dis. **51:** 527-541 (Nov.-Dec.) 1932. Bruynoghe, R., and Maisin, J.: La phagocytose du bactériophage, Compt. rend. Soc. de biol. **86:** 292-293, 1922. Applebaum, Martha, and MacNeal, W. J.: Influence of Pus and Blood on Action of Bacteriophage, J. Infect. Dis. **49:** 225-243 (Sept.) 1931.

27. Gratia, A., and Jaumain, D.: Dualité du principe lytique du colibacille et du staphylocoque, Compt. rend. Soc. de biol. **85:** 882-884, 1921. Zdansky, E.: Kritische und experimentelle Beiträge zur Frage der Wirkungsmöglichkeit der Bakteriophagen im Warmblüterorganismus und in der freien Natur, Ztschr. f. Hyg. u. Infektionskr. **103:** 164-176, 1924. Riding, D.: Acute Bacillary Dysentery in Khartoum Province, Sudan, with Special Reference to Bacteriophage Treatment: Bacteriological Investigation, J. Hyg. **30:** 387-401 (Aug.) 1930. Cowles, P. B., and Hale, W. M.: Effect of Bacteriophage on Experimental Anthrax in White Mice, J. Infect. Dis. **49:** 264-269 (Sept.) 1931. Gratia, A., and Mutsaars, W.: L'action inhibitrice du sérum normal sur la lyse du staphylocoque doré par les bactériophages staphylocoques polyvalents, Compt. rend. Soc. de biol. **106:** 943-945, 1931. Rakieten, M. L.; Zalkin, G., and Rakieten, T. L.: Bacteriophage Inhibition by Serum, Yale J. Biol. & Med. **7:** 541-554 (July) 1935. Evans.[20] Colvin.[20] Applebaum and MacNeal.[20]

28. Burnet, F. M., and Freeman, M.: A Comparative Study of the Inactivation of a Bacteriophage by Immune Serum and by Bacterial Polysaccharides, Australian J. Exper. Biol. & M. Sc. **15:** 49 (March) 1937. Burnet, F. M.: Phage-Inactivating Agent of Bacterial Extracts, J. Path. & Bact. **38:** 285-299 (May) 1934. Levine, Philip, and Frisch, A. W.: Specific Inhibition of Bacteriophage by Bacterial Extracts, Proc. Soc. Exper. Biol. & Med. **30:** 993-996 (April) 1933. Levine, Philip, and Frisch, A. W.: On Specific Inhibition of Bacteriophage Action by Bacterial Extracts, J. Exper. Med. **59:** 213-228 (Feb.) 1934. Levine, Philip, and Frisch, A. W.: On Absorption of Phage by Bacilli, J. Immunol. **26:** 321-325 (April) 1934. Levine, Philip, and Frisch, A. W.: The Specific Behavior of Bacteriophage, J. Bact. **29:** 67 (Jan.) 1935.

29. Ashenburg, N. J.; Sandholzer, L. A.; Scherp, H. W., and Berry, G. P.: The Influence of Bacterial and Nonbacterial Polysaccharides upon Bacteriophagy, J. Bact. **39:** 71-72 (Jan.) 1940.

30. Zaytseff-Jern, Helen; Howes, E. L., and Meleney, F. L.: The Behavior of the Bacteriophage and the Bacteria in the Lesion After the Treatment of Acute Staphylococcus Skin Infections with Bacteriophage, J. Lab. & Clin. Med. **19:** 1257-1271 (Sept.) 1934.

31. Krueger and Fong.[16] Krueger.[18]

32. Nungester, W. J., and Watrous, R. M.: Accumulation of Bacteriophage in Spleen and Liver Following Its Intravenous Inoculation, Proc. Soc. Exper. Biol. & Med. **31:** 901-905 (May) 1934.

33. Clark, P. F., and Clark, A. S.: Bacteriophage Active Against Virulent Hemolytic Streptococcus, Proc. Soc. Exper. Biol. & Med. **24:** 635-639 (April) 1927. Eliava, G.: Au sujet de l'adsorption du bactériophage par les leucocytes, Compt. rend. Soc. de biol. **105:** 829-831, 1930. Krueger, A. P.; Lich, R., Jr., and Schulze, K. R.: Bacteriophage in Experimental Staphylococcal Septicemia, Proc. Soc. Exper. Biol. & Med. **30:** 73-75 (Oct.) 1932. Evans.[20]

explain the failure of certain types of phage therapy. For example, Bronfenbrenner and Sulkin [34] in a well controlled study found that the intravenous injection of homologous phage into rabbits suffering from staphylococcic cutaneous infections was of no value. Also Jern and her co-workers [30] have made some very pertinent observations on patients suffering from furuncles and carbuncles. After large amounts of phage were injected at a distance from the lesions, only one case in four showed the presence of phage in the exudate. In a separate group of eight patients, satellite furuncles developed around the original lesion being treated with phage. Despite the admittedly close relationship between the primary and secondary sites of infection, no phage could be recovered from the latter.

To recapitulate, the cumulative experimental evidence indicates that lysis of invading organisms by phage within the body of the infected host is entirely dependent on local circumstances in the diseased tissue. These are practically without exception inimical to the process of bacteriophagy, largely because the body fluids and the cells participating in the defense reaction exert either a direct inactivating effect on phage or inhibit the interaction of bacteria and phage.

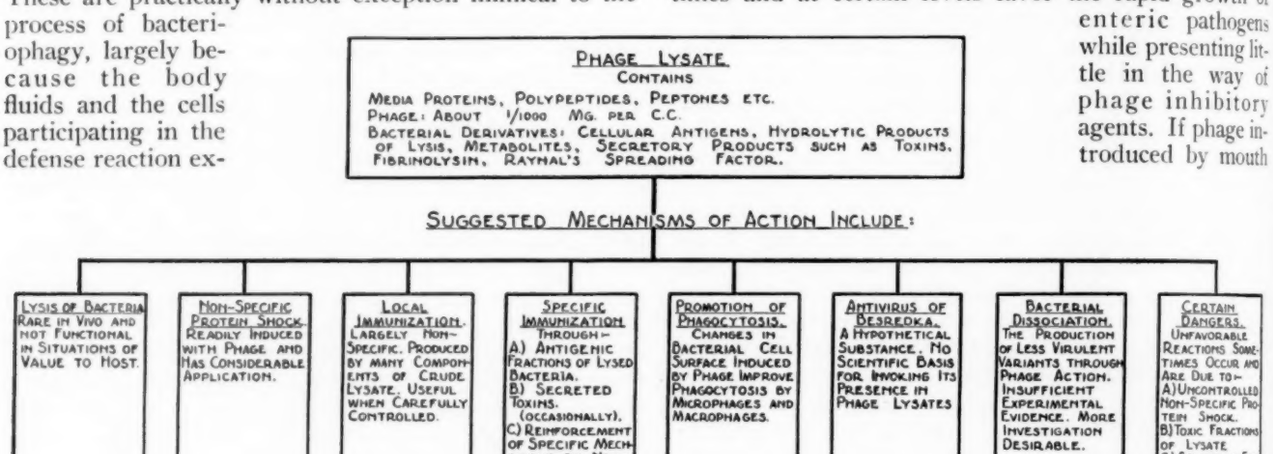
PHAGE LYSATE
CONTAINS
MEDIA PROTEINS, POLYPEPTIDES, PEPTONES ETC.
PHAGE: ABOUT 1/1000 MG. PER C.C.
BACTERIAL DERIVATIVES: CELLULAR ANTIGENS, HYDROLYTIC PRODUCTS OF LYSIS, METABOLITES, SECRETORY PRODUCTS SUCH AS TOXINS, FIBRINOLYSIN, RAYNAL'S SPREADING FACTOR.
SUGGESTED MECHANISMS OF ACTION INCLUDE:
LYSIS OF BACTERIA
RARE IN VIVO AND NOT FUNCTIONAL IN SITUATIONS OF VALUE TO HOST.
THERAPEUTICALLY UNIMPORTANT.
NON-SPECIFIC PROTEIN SHOCK.
READILY INDUCED WITH PHAGE AND HAS CONSIDERABLE APPLICATION.
THERAPEUTICALLY OF SOME IMPORTANCE.
LOCAL IMMUNIZATION.
LARGELY NON-SPECIFIC. PRODUCED BY MANY COMPONENTS OF CRUDE LYSATE. USEFUL WHEN CAREFULLY CONTROLLED.
THERAPEUTICALLY IMPORTANT.
SPECIFIC IMMUNIZATION THROUGH—
A) ANTIGENIC FRACTIONS OF LYSED BACTERIA.
B) SECRETED TOXINS. (OCCASIONALLY).
C) REINFORCEMENT OF SPECIFIC MECHANISMS BY NON-SPECIFIC ELEMENTS OF LYSATE.
A) AND B) IMPORTANT WITH SOME BACTERIA.
C) UNIMPORTANT.
PROMOTION OF PHAGOCYTOSIS.
CHANGES IN BACTERIAL CELL SURFACE INDUCED BY PHAGE IMPROVE PHAGOCYTOSIS BY MICROPHAGES AND MACROPHAGES.
THERAPEUTICALLY IMPORTANT.
ANTIVIRUS OF BESREDKA.
A HYPOTHETICAL SUBSTANCE. NO SCIENTIFIC BASIS FOR INVOKING ITS PRESENCE IN PHAGE LYSATES
THERAPEUTICALLY UNIMPORTANT.
BACTERIAL DISSOCIATION.
THE PRODUCTION OF LESS VIRULENT VARIANTS THROUGH PHAGE ACTION. INSUFFICIENT EXPERIMENTAL EVIDENCE. MORE INVESTIGATION DESIRABLE.
THERAPEUTICALLY DOUBTFUL.
CERTAIN DANGERS.
UNFAVORABLE REACTIONS SOMETIMES OCCUR AND ARE DUE TO—
A) UNCONTROLLED NON-SPECIFIC PROTEIN SHOCK.
B) TOXIC FRACTIONS OF LYSATE
C) SPREADING FACTORS ENHANCING BACTERIAL INVASIVENESS:
① RAYNAL'S FACTOR
② FIBRINOLYSIN.

Fig. 3.—Possible mechanisms that have been advanced as a basis for phage action in vivo. The evaluation of the importance of each mechanism represents the opinion of the authors.

Nevertheless there have been reported a few experimental studies which suggest that actual bacterial lysis may play a role in the therapeutic and prophylactic action of phage. For example, Fisk [35] observed that antityphoid phage injected into mice immediately before the administration of typhoid bacilli conferred a very satisfactory protection. Further, phage-inoculated mice remained resistant to infection for as long as twenty-four hours; even when a period of four hours was allowed to elapse following the injection of organisms before beginning treatment with phage, the results were fully as successful. The fact that heating the phage to 70 C. for fifty minutes eliminated the protective action of the lysate would also suggest that the lytic principle itself was responsible. However, it is conceivable that the period of heating not only destroyed the phage but also inactivated some other biologically active component, e. g. something analogous to the Vi fraction of the typhoid organism. A more conclusive control using an unaltered crude lysate from which the phage had been removed by differential adsorption would be of aid in settling this point.

It is possible to visualize very special conditions under which the lytic effect of phage might be exercised to good advantage. This would be the case in the superficial layers of a wound and in the outer portion of the mucous lining of a cavity such as the bladder where continued application of strong lysates eventually could bring into the area enough phage to cause lysis. The same would be true of localized infectious processes of the bowel (e. g. dysentery) as distinct from generalized systemic infections of gastrointestinal origin (e. g. typhoid). Conditions in the lumen of the bowel can at times and at certain levels favor the rapid growth of enteric pathogens while presenting little in the way of phage inhibitory agents. If phage introduced by mouth successfully escaped the inactivating effect of the gastric juice it might develop at a considerable rate while in contact with a free-growing substrate and could very well regenerate sufficiently to destroy the bacteria.

Nevertheless it is problematic how much good to the host accrues from bacteriophagy in such zones. The striking forces of the invaders are in the depths of the tissues and hence are not to be thought of as participating in what is undoubtedly a very localized superficial reaction. This contention is supported by the data of Jern, Howes and Meleney.[30] In no instance among 110 patients suffering from furuncles and carbuncles did the repeated local use of phage accomplish complete destruction of bacteria in the lesion. Staphylococci persisted even after the slough and exudate had disappeared.

Looking at the phenomenon as a whole, one is forced to conclude that bacteriophagy in vivo is of rare occurrence and that when it does take place bacterial destruction is limited, by virtue of the special environment required, to such locales as preclude phage-engendered lysis of bacteria from playing a major part in recovery. Therefore, with the few exceptions already noted, it is not logical to rely on the lytic power of phage in the treatment of disease. From this point of view the

34. Bronfenbrenner, Jacques, and Sulkin, S. E.: I. Effect of Bacteriophage on Cutaneous Staphylococcus Lesions in Rabbits; II. Prophylactic and Therapeutic Effect of Bacteriophage and of Antivirus in Experimental Infections of the Eye; III. On the Nature of the Deleterious Effect of the Local Application of Staphylococcus Bacteriophage, J. Infect. Dis. **65**: 53-72 (July-Aug.) 1939; Deleterious Effects of Local Application of Staphylococcus Bacteriophage, Proc. Soc. Exper. Biol. & Med. **32**: 1419-1422 (June) 1935.

35. Fisk, R. T.: Protective Action of Typhoid Phage on Experimental Typhoid Infection in Mice, Proc. Soc. Exper. Biol. & Med. **38**: 659-660 (June) 1938.

emphasis in the literature on phage therapy has been misplaced. As a rule the feature most heavily stressed has been the necessity for employing a specific phage, i. e. one active for the causal agent involved, while little has been said about the need for bringing into play a sufficient quantity of phage. Yet it is clear that not only must the qualitative criterion of specificity be met, but in order to manifest activity the phage has to be present in adequate quantity.

The exclusion of direct lytic action of invading organisms as a significant mechanism in the therapeutic action of crude lysates leaves four further possibilities to be considered:

A. *The Development of Less Virulent Variants from Pathogenic Organisms Through Phage-Induced Dissociation.*—The great majority of disease-producing bacteria normally tend to form smooth-surface (S) colonies when grown on solid mediums, but through exposure to an unfavorable environment rough (R) colonies may appear. These are split off from the parent strain in response to the stimulus provided by a great variety of injurious agents, e. g. numerous chemicals, immune serum and bacteriophage. The constituent organisms are apt to be altogether different from the original ones in size, shape, motility, surface structure, antigenic composition, biochemical activities and virulence. Since the R variants are usually less virulent than S strains and are more readily destroyed by the body's defense systems, the dissociation might be very much to the infected host's advantage if it could be made to operate at will. While R forms emerge at times during normal recovery from infection, they are not a universal accompaniment of healing and, as yet, many of the factors which lead to their dissociation from the invading strain in vivo are unknown.

It is not especially difficult to produce less virulent variants from S strains in vitro by means of phage action, but no satisfactory statistical survey has been conducted to determine the effectiveness of phage treatment in initiating the phenomenon in the patient. Some indication of such action was found by Gowen [36] and Jern, Howes and Meleney [30] during the studies already referred to. They noted that repeated applications of phage to boils or carbuncles altered the cultural characteristics of the bacteria and caused them to form moth-eaten, degenerative and roughened colonies, sometimes with changes in chromogenic and hemolytic properties. Here again the quantitative aspects of phage therapy are seen to be important, for the dissociative effect tended to disappear within forty-eight hours unless topical treatments were repeated. This coincides with Jern's report that, "while the bacteriophage persisted in the lesion and still had some destructive action after twenty-four hours, it did not increase in potency as it did in the test tube. Instead, it grew progressively weaker."

To keep sufficient phage in the area so that bacterial dissociation can be continuously maintained, the phage supply must be renewed from time to time. Even then it is difficult to find any correlation between the successful induction of dissociation and a favorable host response. In Jern's series, 82 per cent of the patients showing no detectable variants in wound cultures were improved by phage treatments, while only 33 per cent of the patients whose cultures revealed staphylococcus dissociation were clinically benefited.

36. Gowen, G. H.: Correlation of Bacteriological and Clinical Course in Phage Therapy of Chronic Furunculosis of Face, Illinois M. J. **70:** 82-86 (July) 1936.

One must admit that this phase of phage therapy offers theoretical possibilities worthy of further investigation. While it may well prove to constitute a very limited approach, it is more conducive to a healthy state of mind in evaluating the results which follow the use of phage than is the overstressed dependence on lytic destruction of bacteria in situ. At the same time it should be pointed out that dissociation can take the opposite direction and sometimes may lead to the formation of more virulent bacterial strains. Madison [37] has found this to be true of variants arising through phage action on the hemolytic streptococci. The tissue invasiveness of the original organism was shown to parallel its capacity to secrete the fibrin-dissolving principle, fibrinolysin. Phage induced variants formed ten times the concentration of fibrinolysin produced by the parent strain and consequently were potentially more dangerous to the host.[38]

B. *The Augmentation of Phagocytic Efficiency Through the Stimulus Supplied by Phage.*—The intravenous injection of a great array of entirely nonspecific materials present in culture mediums, bacterial filtrates and the like is known to produce leukocytosis (see section D), so it is not surprising that phage lysates can accomplish the same end. However, phage itself as distinct from the various complexes of the crude lysate, appears to exert a very interesting and highly specific effect in enhancing both the mobilization of leukocytes and their phagocytic capacity. To summarize the essential facts:

1. The intravenous injection of phage and susceptible staphylococci into rabbits causes a more pronounced leukocytosis than the injection of either susceptible organisms alone or phage mixed with resistant staphylococci (Nelson [39]).

2. Phagocytosis of susceptible bacteria in vitro is promoted by the presence of phage, while phage has no effect on the phagocytosis of resistant strains (Smith [40] and Nelson [39]). More recently MacNeal, McRae and Colmers [41] have shown that this stimulation occurs not only in aqueous mediums but in blood serum as well and that, during the first hour after the intravenous injection of phage, phagocytosis of susceptible organisms in vivo is increased. Hoder [42] reports that phage-resistant strains of the staphylococcus, typhoid bacillus, dysentery bacillus and colon bacillus which arise during the course of the phage-bacterium reaction usually are more readily phagocytized than the normal phage-susceptible strains.

3. The phagocytic efficiency of the reticuloendothelial system is raised when rabbits suffering from staphylococcic septicemia are given intravenous injections of homologous phage (MacNeal, Frisbee and Slavkin).[43]

It would seem that the attachment of phage to an organism so alters the surface composition that phagocytosis by macrophages and microphages takes place more readily.

37. Fraser, Frieda H., and Madison, R. R.: Fibrinolytic Titer of Scarlatinal Streptococcus, Proc. Soc. Exper. Biol. & Med. **33:** 307-309 (Nov.) 1935.

38. Contraindicated Bacteriophage Therapy, Current Comment, J. A. M. A. **111:** 536 (Aug. 6) 1938.

39. Nelson, A. R.: Effect of Bacteriophage upon Phenomena of Leukocytosis and Phagocytosis, J. Immunol. **15:** 43-64 (Jan.) 1928.

40. Smith, G. H.: Bacteriophage and Phagocytosis: Effect on Resistant and Dead Bacteria, J. Immunol. **15:** 125-140 (March) 1928.

41. MacNeal, W. J.; McRae, M. A., and Colmers, R. A.: Further Observations on Bacteriophage Action in Presence of Blood, J. Infect. Dis. **63:** 25-33 (July-Aug.) 1938.

42. Hoder, F.: Der Einfluss von Bakteriophagen auf die Phagozytierbarkeit von Bakterien; experimenteller Beitrag zur therapeutischen Wirkung von Bakteriophagen, Ztschr. f. Immunitätsforsch. u. exper. Therap. **84:** 46-61 (Dec. 31) 1934.

43. MacNeal, W. J.; Frisbee, F. C., and Slavkin, A. E.: Mechanism of Bacteriophage Action in Staphylococcus Bacteremia, Proc. Soc. Exper. Biol. & Med. **30:** 12-14 (Oct.) 1932.

C. *The Stimulation of Specific Antibacterial Immunity in the Host by Antigenic Fractions of Lysed Organisms.*—In the preparation of a lysate, susceptible bacteria are grown in broth to which the appropriate phage has been added. As a terminal event, in the reaction from 10 million to 2 billion bacteria per cubic centimeter are disrupted, a portion of the released bacterial substance consisting of specific antigens. Unfortunately a certain percentage of protein, varying with the nature of the bacterium, is hydrolyzed during lysis and consequently loses its immunity-provoking capacity. Northrop [44] has found that lytic disruption of Staphylococcus aureus is attended by loss of all the native protein, while intact protein appears in solution during the lysis of Bacillus coli or B. megatherium. When the residual intact fraction is injected hypodermically it functions actively as a vaccine and evokes formation of characteristic humoral antibodies. Unquestionably many bacteriophage preparations are potent immunizing solutions (Arnold and Weiss,[45] Maslakowetz and Kasarnowsky,[46] Compton,[47] Flu [48] and others) but active immunity produced in this way takes considerable time to develop and is not detectable ordinarily until four or five days have elapsed. Consequently, specific immunization with such cellular antigens as are not destroyed during lysis is not a weapon for immediate use in an acute infection. Additional studies of the type undertaken by Hetler and Bronfenbrenner [49] and Northrop [44] are needed to measure the extent of protein hydrolysis occurring when lysates are made from a wide range of pathogenic forms.

There are some data to indicate that phage lysates make particularly good immunizing agents and that their protective effect is exerted more rapidly than that of an orthodox vaccine (Larkum [50]). This is not unreasonable, for the antigenic materials of a lysate are already in solution and need not be broken down by preliminary cellular digestion to become available for immunization. Furthermore, toxin-producing organisms, e. g. the staphylococcus, can secrete into the medium a significant quantity of toxin during preparation of a lysate (King, Boyd and Conlin,[51] Holm, Anderson and Leonard [52]). When injected, the toxin stimulates the formation of antitoxin and the latter may furnish signal aid to the infected patient, provided of course the situation is not too acute and there is enough time for the specific immune mechanism to be brought into play (Larkum [53]). Occasionally the toxin fraction is large enough to produce severe reactions in the host.[51]

A well recognized phenomenon in experimental bacteriology is the induction of immunity confined to a limited tissue area and not shared by the body as a whole. This local immunity appears subsequent to the topical application of various culture filtrates and whole cell suspensions but the best of the available evidence suggests that the immunity is not specific and that nonspecific factors are of primary importance in its production; consequently it will be discussed in the next section.

D. *The Stimulation of Specific or Nonspecific Immune Mechanisms of the Host by Proteins, Peptones and So On of the Crude Lysate.*—It is a curious fact, but a satisfactorily verified one, that the injection of a great variety of nonrelated substances can occasion at times a rise in titer of narrowly specific humoral antibodies. Among the provocative agents are included such materials as proteins, polypeptides, metallic salts and all sorts of colloids, which not only are mutually unrelated but bear no antigenic relationship whatever to the antibody whose titer increases. This seems at first hand contradictory to the tenets of the modern school of immunology, for one of its major accomplishments has been the exhaustive elucidation of chemical specificity as originally envisioned by Ehrlich. The accumulated data have proved that the specific reactive groups of an antibody are a direct reflection of the structural configuration of the antigen used to produce it. Nonetheless it is true that completely nonspecific agents may elicit the following types of response:

1. Enhancement of specific antibody production when administered early in the immunizing program.
2. Increase in the normal antibody content of the blood stream (normal antibodies are those present in a nonimmunized and previously uninfected individual and cannot be related definitely to any previous contact of the host with the corresponding antigen).
3. Secondary stimulation of antibody production when the nonspecific agent is used after the primary specific immunization has attained a maximum.

These host reactions are not qualitatively or quantitatively comparable to the intensive or lasting antibody response which takes place after the injection of specific antigen, nor can they be relied on to follow with regularity the use of any particular nonspecific material. They fit into the general theory of serologic specificity as minor and undependable reinforcements of the basic specific reactions.

Unpurified phage lysates carry with them a notable amount of complex medium constituents, cellular derivatives, metabolites and the like, all of which may function as augmenters of immunity in the sense just defined. It is unlikely that they account for any considerable degree of therapeutic efficiency on the part of the lysate.

Besides supplying a negligible stimulus to the body's specific immune system, the agents enumerated are responsible for an altogether different type of bodily reaction known as nonspecific protein shock.[54] Within a few minutes after the intravenous injection of serum globulin, albumin, milk, typhoid vaccine and the like, the patient experiences a chill followed by a sharp rise in temperature. The fever breaks in from one to three hours and sometimes remains at a normal level even when the patient's illness previously has run a prolonged febrile course. The subsequent symptomatic relief may be striking. It appears to depend on profound changes

44. Northrop, J. H.: Changes in Protein-Content of Bacterial Suspensions During Lysis and Autolysis, Proc. Soc. Exper. Biol. & Med. **39:** 198-202 (Oct.) 1938.

45. Arnold, L., and Weiss, E.: Prophylactic and Therapeutic Possibilities of the Twort-d'Herelle Bacteriophage, J. Lab. & Clin. Med. **12:** 20-31 (Oct.) 1926. Arnold, L., and Weiss, E.: Antigenic Properties of Bacteriophage, J. Infect. Dis. **34:** 317-327 (March) 1924.

46. Maslakowetz, P., and Kasarnowsky, S.: Versuche der Darstellung von Antigenen mittels bakteriophagen Lysins, Ztschr. f. Hyg. u. Infektionskr. **108:** 13-22, 1927.

47. Compton, A.: Sensitization and Immunization with Bacteriophage in Experimental Plague, J. Infect. Dis. **43:** 448-457 (Nov.) 1928.

48. Flu, P. C.: Immunisation des rats contre le peste au moyen de suspensions concentrées de bacilles pesteux virulents lysés par le bactériophage anti-pesteux, Bull. Soc. path. exot. **26:** 796-806, 1933.

49. Hetler, D. M., and Bronfenbrenner, Jacques: Studies of Bacteriophage of d'Herelle: Evidence of Hydrolysis of Bacterial Protein During Lysis, J. Exper. Med. **48:** 269-275 (Aug.) 1928.

50. Larkum, N. W.: Bacteriophage as a Substitute for Typhoid Vaccine, J. Bact. **17:** 42 (Jan.) 1929.

51. King, W. E.; Boyd, D. A., Jr., and Conlin, J. H.: The Cause of Local Reactions Following the Administration of Staphylococcus Bacteriophage, Am. J. Clin. Path. **4:** 336-345 (July) 1934.

52. Holm, A.; Anderson, J. F., and Leonard, G. F.: Staphylococcus Bacteriophage Toxoid: An Improved Staphylococcus Antigen, Am. J. Pub. Health **26:** 1001-1007 (Oct.) 1936.

53. Larkum, N. W.: Production of Antitoxin by Means of Bacteriophage, Am. J. Pub. Health **23:** 1155-1158 (Nov.) 1933.

54. Petersen, W. F.: Protein Therapy and Nonspecific Resistance, New York, Macmillan Company, 1922.

in the fundamental biochemical process of the body, and Petersen [55] has collected an impressive array of data exemplifying the manifold expressions these changes may take. Certain of them represent direct augmentation of the bodily defenses against infection. This would be true of the following, to make only a partial list:

1. Leukocytosis preceded by primary leukopenia.
2. Mobilization of serum enzymes.
3. Stimulation of the sympathetic nervous system.
4. Increased lymph flow and lymph volume.

Properly employed, nonspecific protein shock may be a most useful weapon in treating infectious diseases, and phage lysates are well suited to its induction. However, whether elicited by phage or some other nonspecific preparation, it is a modality which must be cautiously and critically applied because of its potentialities for harm to patients whose systems already carry the heavy burdens of illness.

A more limited form of defensive reaction may be involved when lysates are used for topical treatments. The application of killed bacterial cultures, culture filtrates, autolyzed cultures and so on to given tissue areas can confer a material increase in immunity confined to the treated zones without in any way elevating the resistance of the body as a whole. This local immunity is evidently nonspecific, both in origin and in action, for it can be evoked by the application of bacteria-free meat extract broth [56] and is effective against many different organisms. Fundamentally it seems to depend on the production of a localized inflammatory reaction and concomitant macrophage infiltration.[57] The latter persists after the inflammation has subsided and its extent is in effect a measure of the tissue's capacity to resist infection, although there is good evidence not only that it is the quantity of cells which is concerned but that in addition there are local factors tending to increase the phagocytic efficiency of the mobilized macrophages.

No single component of the preparations used to bring about local immunity is common to them all, so it follows that the property of raising a tissue's defense barriers is characteristic of entirely distinct chemical entities. Phage lysates in general should be agents *par excellence* for topical use in developing local immunity, since they contain several of the individual materials known to be active in this direction; it is our opinion that much of their therapeutic efficiency can be ascribed to this mechanism.

The results following the instillation of phage or the use of dressings wet with phage are not uniformly favorable. In recently reported experiments Bronfenbrenner and Sulkin [34] applied wet dressings and instillations of phage to staphylococcic skin and eye lesions in rabbits with no result beyond temporary intensification of the inflammatory reaction. They feel that lysates made from invasive strains of staphylococcus are apt to contain the thermostable Reynal's spreading factor and can be dangerous to the host by promoting the influx of bacteria into the tissues. They recommend that noninvasive strains be selected for the preparation of therapeutic lysates.

55. Petersen, W. F.: Nonspecific Protein Therapy, in Jordan, E. O., and Falk, I. S.: The Newer Knowledge of Bacteriology and Immunity, Chicago, University of Chicago Press, 1928; chapter 28, pp. 1086-1100.
56. Gratia, A.: Phagocytose et immunité locale, Compt. rend. Soc. de biol. **89**: 826-828, 1923.
57. Gay, F. D., and others: Agents of Disease and Host Resistance, Springfield, Ill., Charles C. Thomas, Publisher, 1935, pp. 448-450.

As a final consideration, there remains the possibility that the antivirus of Besredka [58] may be implicated in local treatments with lysates. This hypothetic substance is said to be present in the cell-free filtrates of old broth cultures of bacteria and according to Besredka consists of a nonantigenic but toxic bacterial derivative which possesses the admirable property of specifically desensitizing such host cells as are susceptible to the invading bacterium. The induced resistance appears within twenty-four hours after treatment; that is, very much earlier than is the case with classic immune responses. The French medical literature contains voluminous reports on the successful use of Besredka's preparations, and Eaton and Bayne-Jones [1] have summarized some of the typical data. They feel, as we do, that a large amount of the clinical and experimental evidence regarding antivirus is inconclusive and that Besredka's interpretations of his own and others' observations are as yet unproved. Even if we grant that a measure of success has attended the clinical application of antivirus therapy there is no reason to jump to the conclusion that the results depend on a purely theoretical antivirus. They could just as well be due to the presence of the entirely nonspecific agents responsible for production of local immunity.

*(The remainder of this article will be published in the next issue of* THE JOURNAL*)*

58. Besredka, Alexander: Local Immunization: Specific Dressings, edited and translated by Harry Plotz, Baltimore, Williams & Wilkins Company, 1927.

## NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

OFFICE OF THE COUNCIL.

**ASCORBIC ACID** (See New and Nonofficial Remedies, 1940, p. 530).

The following dosage form has been accepted:

*Mead's Ascorbic Acid Tablets, 100 mg.:* Each tablet contains 100 mg. of ascorbic acid-N. N. R. equivalent to 2,000 international units of vitamin C.

Prepared by Mead Johnson & Co., Evansville, Ind.

**ANTIMENINGOCOCCIC SERUM** (See New and Nonofficial Remedies, 1940, p. 427).

The following product has been accepted:

Sharp & Dohme, Inc., Philadelphia.

*"Lyovac" Antimeningococcic Serum Natural Polyvalent.*—A dried form of antimeningococcic immune natural serum, prepared from the blood of horses immunized with new or recently isolated strains representing four main types of meningococci. It is packaged by the "Lyovac" process, which consists essentially of rapid freezing at a temperature far below the freezing point, together with rapid dehydration under high vacuum without melting or fusing of the original frozen substance. The finished product is sealed under vacuum in the "Vacule" flame-sealed ampoule-vial. Marketed in packages including one double-end "Vacule" ampoule to yield 15 cc. of restored serum, one needle-ampoule containing 15 cc. of distilled water (with preservative: Phenol, 0.35%), one complete intraspinal outfit and one 1 cc. ampoule-vial of Normal Horse Serum (diluted 1:10) as test and desensitizing material.

**PENTOBARBITAL SODIUM** (See New and Nonofficial Remedies, 1940, p. 128).

The following dosage forms have been accepted:

*Capsules Pentobarbital Sodium-Endo, ¾ grain.*
Prepared by Endo Products, Inc., Richmond Hill, N. Y.
*Capsules Pentobarbital Sodium-Endo, 1½ grains.*
Prepared by Endo Products, Inc., Richmond Hill, N. Y.

**SULFAPYRIDINE** (See New and Nonofficial Remedies, 1940, p. 495).

The following product has been accepted:

**Sulfapyridine-Abbott.**—A brand of sulfapyridine-N. N. R.
Manufactured by Abbott Laboratories, North Chicago, Ill. No U. S. patent or trademark.
*Capsules Sulfapyridine-Abbott, 0.25 Gm. (3.85 grains).*
*Tablets Sulfapyridine-Abbott, 0.5 Gm. (7.7 grains).*
*Tablets Sulfapyridine-Abbott, 0.5 Gm. (7.7 grains) (bisected).*

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SATURDAY, MAY 10, 1941

## FEDERAL DRUG REGULATIONS AMENDED

The Acting Administrator of the Federal Security Agency on April 10 announced [1] amendments to the original regulations promulgated in December 1938 [2] under sections 502(f), 505(b) and 505(i) of the Food, Drug and Cosmetic Act. The amended regulation under section 502(f) becomes effective on October 7; the other amended regulations take effect May 10.

The amendment of special interest to the medical profession relates to the regulation previously promulgated under section 502(f), which declares a drug or device misbranded unless its label bears (1) adequate directions for use and (2) adequate warnings against misuse. The application of section 502(f) and the original regulation promulgated under this section to drugs dispensed by physicians or on physicians' prescriptions was discussed in a previous issue of THE JOURNAL by Dr. Theodore G. Klumpp,[3] Chief of the Drug Division of the Food and Drug Administration. The amended regulation exempts from compliance with the requirements of clause (1) of section 502(f) a shipment or other delivery of a drug or device (*a*) if such shipment or delivery is made for use exclusively by or on the prescription of physicians, dentists or veterinarians licensed by law to use such drug or device, (*b*) if the label of the drug or device bears the statement "Caution: To be used only by or on the prescription of a ———" or "Caution: To be used only by a ———" ["physician," "dentist" or "veterinarian" or any combination of two or all of such words to be inserted], (*c*) if no representation appears in the labeling of such drug or device with respect to the conditions for which it is to be used, (*d*) if adequate directions for the use of such drug or device are available in scientific publications or otherwise and (*e*) in case the drug is not designated solely by a name recognized in an official compendium and is fabricated from two or more ingredients, if its label also bears the quantity or proportion of each active ingredient. The amended regulation provides that the exemption shall remain valid until all of such shipment or delivery is dispensed on and under labels bearing the directions for use specified in prescriptions of physicians, dentists or veterinarians. The amended regulation, as does the original regulation, also exempts from compliance with the requirements of clause (1) of section 502(f) any shipment or other delivery of a drug or device (1) with respect to directions for common uses if adequate directions for such uses are known by the ordinary individual or (2) if such drug is made for use exclusively in the manufacture of another drug or device and its labeling bears the statement "For manufacturing use only" and contains no representation relative to the effect of such drug or device. Both the amended regulation and the original regulation declare that the exemptions relative to drugs or devices for use only by or on the prescription of a physician, dentist or veterinarian, or for manufacturing use only, shall expire if any part of the shipment or delivery is disposed of for any use other than by or on the prescription of a physician, dentist or veterinarian or for manufacturing use, as the case may be. Any person causing any such exemption so to expire shall be considered as having committed an act of misbranding unless, prior to such disposition, such drug or device is relabeled to comply with clause (1) of section 502(f).

The amendment to the regulation heretofore promulgated under section 505(b) is of no special interest to physicians and so will not be discussed.

The amended regulation under section 505(i) does affect physicians and others engaged in research. It provides that "new drugs" intended solely for investigational use, which under section 505(i) are exempt from the provisions of the act relating to "new drugs," be labeled "Caution: New drug—Limited by Federal law to investigational use" instead of the labeling required under the original regulation "For investigational use only." It requires (*a*) that the shipment or delivery of such a drug be made only to, and solely for investigational use by or under the direction of, an expert qualified by scientific training and experience to investigate the safety of such drug, (*b*) that the person introducing such a shipment or delivery into interstate commerce obtain a signed statement from the expert investigator that he has adequate facilities for the investigation and that the drug will be used solely by him or under his direction for purposes of investigation, unless or until an application becomes effective with respect to such drug under section 505 of the act and (*c*) that the shipper preserve such statement together with complete records showing the date and quantity of each shipment or delivery and make them available for inspection on the request of a representative of the Federal Security Agency until three years after the introduction of such shipment or delivery into interstate commerce. It is provided that the exemption from the provisions of the act relating to new drugs shall

1. Federal Register **6**: 1920 (April 15) 1941.
2. Federal Register **3**: 3167 (Dec. 28) 1938.
3. Klumpp, Theodore G.: The Federal Food, Drug and Cosmetic Act as It Applies to Drugs Dispensed by Physicians or on Physicians' Prescriptions, J. A. M. A. **116**: 830 (March 1) 1941.

become void if the shipper fails to preserve or make available for inspection the investigator's signed statement and the other records required or if any part of such shipment or delivery is used other than in accordance with the investigator's statement.

These regulations result from experience and are planned in the interest of protection of the public health. They do not place any added burden on the medical profession. They provide opportunity for research with new preparations and at the same time protect the public against precipitous exploitation of new drugs.

## AVITAMINOTIC DYSENTERY

The Shiga bacillus can function as a harmless saprophyte in the intestine of normal monkeys, according to Day [1] and his co-workers of the University of Arkansas, but it assumes lethal pathogenicity if the animals are placed on a "vitamin M" deficiency diet.

Avitaminotic dysentery was first described by Verder and Petran,[2] who found that the withdrawal of vitamin A from the diet of monkeys is almost invariably followed by the development of gastrointestinal disturbances. They noted further that the serum of avitaminotic diarrheal monkeys usually agglutinated the dysentery bacillus, though the organism itself could not be detected in the stools till after death. They concluded that, while the dysentery bacillus was directly responsible for the diarrhea, the essential etiologic factor was the vitamin A deficiency.

Langston and his colleagues [3] afterward found that monkeys given a diet fractionally deficient in parts of the vitamin B complex usually develop anemia, leukopenia, gingivitis and diarrhea, from which death usually occurs between the twenty-sixth and the one hundredth day. Since the lethal effects were not prevented by riboflavin, thiamine hydrochloride or nicotinic acid given alone or in combination, they concluded that the essential etiologic factor is not identical with any part of the vitamin B complex thus far identified. The essential therapeutic factor, however, is present in dried yeast and in crude liver extract but is absent in most samples of commercially purified liver extract. For the unknown factor that prevents this deficiency which results in diarrhea they suggested the term vitamin M.

Detailed bacteriologic studies of M-avitaminotic dysentery were afterward made by Janota and Dack [4] of the University of Chicago. Large doses of living dysentery bacilli administered to normal monkeys would not produce dysentery. Confirming this negative result they found that many of their captive monkeys maintained on an adequate stock diet were healthy carriers of B. dysenteriae (Flexner). As soon as these healthy carriers were placed on a vitamin M deficiency diet they developed Flexner type bacillary dysentery. Monkeys on diets deficient in vitamins A, C and D in addition to the M factor did not show severer symptoms, from which they concluded that M is the essential antidysentery vitamin in this animal species.

In their latest studies of nutritional cytopenia, Day and his colleagues [1] have confirmed these bacteriologic results, recovering Shigella paradysenteriae from the stools of M-deficiency monkeys. In one of their series 3 out of 16 monkeys with this deficiency failed to develop diarrhea, although each exhibited severe leukopenia before death. They conclude that the diarrhea is not the essential cause of the lethal blood dyscrasia. They interpret their results as proof that vitamin M deficiency causes a lowered microbic resistance in the gastrointestinal mucosa, and that gingivitis and ulcerative colitis result from the action of pathogenic saprophytes already present in these locations.

The probability that their conclusions are applicable also to man is strengthened by recent studies of human dysentery carriers. In an examination of six hundred and eighty-eight apparently well persons in Henrico County, Va., for example, McGinnes and his colleagues [5] found one hundred and ten (17.6 per cent) whose intestine harbored the dysentery bacillus. Whether or not the few associated cases of clinical dysentery were correlated with nutritional deficiencies, however, was not determined by the Virginia epidemiologists. If nutritional deficiency is the essential etiologic factor in human dysentery, the path to epidemiologic control of this disease becomes apparent.

## MAGAZINES FOR THE WAITING ROOM

Patients and office attendants in physicians' waiting and reception rooms throughout the country report increasingly that *Hygeia,* the Health Magazine, when available, is most frequently read. One attendant reports that thirteen copies of news stand favorites were available in the office under her observation. With six copies of popular 5 cent weeklies at hand, one was in use. From two copies of a well known magazine that specializes in cartoons, one was chosen for reading. Of three copies of a popular picture magazine, one was being read. But with two copies of *Hygeia* present, both were in use!

*Hygeia's* appeal accords with the tremendous increase in interest in well presented health material. The great attendance at health exhibits in the Chicago Century of Progress Exposition, at the New York World's Fair or at the more localized expositions in such cities as Milwaukee, San Francisco, Cleveland and Pittsburgh exemplify this interest. The informative, well illus-

1. Day, P. L.; Lanston, W. C.; Darby, W. J.; Wohlin, J. G., and Nims, Virginia: J. Exper. Med. **72:** 463 (Oct.) 1940.
2. Verder, Elizabeth, and Petran, Elizabeth: J. Infect. Dis. **60:** 193 (March-April) 1937.
3. Langston, W. C.; Darby, W. J.; Shukers, C. F., and Day, P. L.: J. Exper. Med. **68:** 923 (Dec.) 1938.
4. Janota, Martha, and Dack, G. M.: J. Infect. Dis. **65:** 217 (Sept.-Oct.) 1939.
5. McGinnes, G. F.; McLean, A. L.; Spindle, Forrest, and Maxcy, K. F.: Am. J. Hyg. **24:** 552 (Nov.) 1936.

trated, authoritative articles found in *Hygeia* meet this thirst for knowledge about health.

Since the physician's reception room is a health center, it is the logical place for dissemination of facts about health. The patient comes there because of a definite interest in health and appreciates the opportunity to increase his knowledge by reading *Hygeia's* articles rather than fiction or entertainment. A patient waiting to see a doctor is not interested in entertainment; he wants information and help.

A careful survey of one hundred offices in eighteen representative cities was recently made to observe reading preferences of waiting patients throughout the entire "office day." From the figures obtained, it is apparent that nearly two million waiting patients now read *Hygeia* every month in doctors' offices. Subsequently a test was made to determine "reader response" by inserting special coupons in doctors' copies of *Hygeia*. Waiting patients signed and returned about one third of the coupons—demonstrating that they are definitely motivated by what they find in the magazine.

Physicians who are subscribers frequently write that *Hygeia* disappears from their reception rooms, being frequently carried away by patients who find articles of special interest to them. In such instances, on receipt of postal card notice, an additional copy will be mailed without charge to the physician.

The physician who does not keep recent copies of *Hygeia* available in his reception room for waiting patients to read is overlooking an opportunity to benefit himself and his patients. Patients will appreciate the thoughtfulness of the doctor in providing the magazine. They will profit from its authentic articles and gain an increasing respect for scientific medicine. The physician will find such patients more cooperative and more appreciative of his services.

## *Current Comment*

### OSTEOPATHY IN NEBRASKA

Osteopaths may not practice operative surgery in Nebraska, according to an opinion handed down May 2 by the supreme court of that state. The supreme court based its opinion, it is reported, on the fact that the legislature had recognized a difference between the practice of medicine and surgery on the one hand and the practice of osteopathy on the other by providing for the issuance of different types of licenses to the two classes of practitioners. The osteopaths in Nebraska have sought to take a short cut to the field of medicine by having enacted a law authorizing them to practice as taught in osteopathic schools. This type of statute was resorted to in the belief that, by the simple expedient of adding additional courses in osteopathic schools, osteopaths could ease over into the practice of medicine without having to obtain specific legislative authority. Formerly they tried the same procedure in Kansas, where the supreme court said in effect that if osteopaths desire to practice medicine they should qualify in the same manner in which doctors of medicine have to qualify. Now another state supreme court has halted the attempt by osteopaths to obtain the right to practice in a field in which by training and experience they are not qualified. To the argument that the principles of osteopathy have changed, Justice Carter in the Nebraska case replied that the scope of osteopathy cannot be changed merely by a self-serving attempt to broaden its extent by invading fields requiring a different license. "If the changes are the result of advancements in the profession," continued Justice Carter, "they still constitute the practice of osteopathy. But the practice of operative surgery by an osteopath is an invasion of the field of the physician and surgeon as it is generally known and is not an evolutionary advancement of the profession." Assistant Attorney General Clarke in prosecuting this case to a conclusion has earned distinction not only for himself but for the state of Nebraska.

### LEISHMANIASIS IN CRETE

On the island of Crete Dr. Basileus Malamos of Athens conducted studies on leishmaniasis. Crete is said to be the only place in the world where the three types of Leishmania are found simultaneously. Kala-azar, oriental boil (also called Aleppo boil, Delhi sore, Pendjdeh sore and Biskra button) and canine kala-azar occur. Transmission takes place through gnats (Phlebotomus) and is specific. Oriental boil is encountered more frequently in the interior of cities, in narrow, dark streets and in certain dwellings. Kala-azar is found chiefly at the edge of towns or in houses in a rural environment. The explanation by Malamos is that the vector of kala-azar can move only within a short radius, whereas that of oriental boil can fly some distance. This explains why the two diseases are rarely found in the same person and why kala-azar is met frequently in children whose contact with the ground is closer. The clinical manifestations of kala-azar include pronounced leukopenia, enlargement of the spleen, meteorism, discoloration of the skin, anemia, progressive emaciation, cachexia and prolonged fever with remissions. The differential diagnosis must consider malaria, erythroblastosis and anemias due to other causes. Thorough diagnosis requires sternal puncture. Spleen puncture, formerly employed, has been found to be dangerous and has been discontinued. Antimony is the substance used chiefly in combating the disease. Military physicians must consider kala-azar. Cases of kala-azar were observed in the recent Spanish civil war among nazi troops fighting for Franco, and the condition was first mistaken for malaria. The oriental boil may occur more than once in the same person from repeated bites by infected gnats, each sting leading to a boil. Here differential diagnosis must consider lupus, lipoma and syphilis. Cauterization is the therapy recommended. Canine kala-azar occurs in dogs that have access to city areas in which human kala-azar is encountered. The manifestations in canine kala-azar are about the same as in the human type. However, ulcers, loss of hair and a rapidly induced cachexia can also be observed.

# MEDICAL PREPAREDNESS

*In this section of* ***The Journal*** *each week will appear official notices by the Committee on Medical Preparedness of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medical preparedness, and such other information and announcements as will be useful to the medical profession.*

## SELECTIVE SERVICE SYSTEM ACTS TO DEFER MEDICAL STUDENTS AND INTERNS

To meet a "growing national shortage of physicians and surgeons," reported by the Office of Production Management, a policy of deferment from military training of individual medical students "who give reasonable promise of becoming acceptable medical doctors" was proclaimed, March 4, by Brig. Gen. Lewis B. Hershey, deputy director of Selective Service. These deferments should be continued in each case as long as the student is progressing satisfactorily, he said.

General Hershey's memorandum, which summarizes the report of the OPM, was sent to all state Selective Service directors for communication to their local boards. It stresses the OPM statement that the shortage of physicians and surgeons affects both the nation's armed forces and the civilian population and that the utmost care must be exercised to meet both needs.

Local boards are urged to see that, while no practicing physician whose services are necessary to his community is called for military service, the requirements of the armed forces for physicians and surgeons also are filled. It also is stressed that where physicians, including interns, are eligible for military service they should be encouraged to apply for Medical Reserve Corps commissions, but that they will be inducted if they are placed in class I-A and fail to take advantage of the opportunity to be commissioned. In the case of interns it was pointed out that, if commissioned, they will be deferred from active duty by the War Department to complete one year's internship.

Summarizing the OPM report on its study of the situation, General Hershey pointed out that it indicates a present need of around 9,000 medical officers for the Army, Navy, Public Health Service and Veterans Administration in addition to present staffs. This approximates a reduction of about 5 per cent in the number of physicians now available for service in civilian life, and it is estimated that the further demand caused by health problems in communities expanded by new defense industries will increase this civilian need to about 10 per cent.

In addition to the 9,000 additional medical officers required by the Army, Navy and other defense agencies, General Hershey said the OPM report showed a probable annual turnover of around 3,500 because of retirement of regular medical officers and the expiration of tours of duty of reserve medical officers.

The OPM report estimates that there are 155,000 practicing physicians in the United States, of whom about 27,000 are 65 years of age or older, and the mortality is around 3,800 a year. Their places can be filled only by medical graduates who enter the profession each year and their number is estimated at approximately 5,000, of whom only 60 to 65 per cent probably would be qualified physically or otherwise for military service.

Commenting on this situation in announcing the Selective Service policy of deferring medical students who are making satisfactory progress in their professional training, General Hershey's memorandum to state directors stated:

> There are no replacements for medical students who are withdrawn from school. Consequently if the supply of medical students who are to be graduated into the medical profession is reduced through their induction to serve in a nonprofessional capacity, an increasing reduction of physicians available for military service as well as an aggravation of the increasing overall national shortage will result.

As an outline of policy and procedure for the Selective Service System concerning medical students, General Hershey quoted the OPM report:

> It is of paramount importance that the supply be not only maintained but encouraged to grow, and that no student or intern who gives reasonable promise of becoming an acceptable medical doctor be called to military service before attaining that status.

Local boards were cautioned, however, that deferment is not an exemption and that the obligation and liability for military service remain on its expiration.

General Hershey's memorandum also called attention to a previous one, issued on April 22, prescribing procedure for deferment of individual students in a number of specialized professional fields which were suggested by the Office of Production Management. This memorandum suggested procedure for presenting local boards with detailed facts concerning individual students, which was prepared by the American Council of Education and concurred in by National Headquarters of the Selective Service System. As set forth in a bulletin (number 10) issued by the council, this provides for getting into the hands of the local board of a "student statement of information" concerning his status and plans, and an affidavit by his college or university in which the college officials testify as to his standing, courses and occupational objectives, together with a general evaluation of the student as a "necessary man" for occupational deferment.

## ARMY RESERVE OFFICERS ORDERED TO ACTIVE DUTY

### WAR DEPARTMENT

The following additional medical reserve corps officers have been ordered to extended active duty by the War Department, Washington, D. C.:

DAVIS, John Evan, Jr., 1st Lieut., Trenton, N. J.
DOEHRING, Paul Christoph, Jr., 1st Lieut., Rochester, Minn.
FLANDERS, Merton Newcomb, 1st Lieut., Waterville, Me.
FUIKS, Dellivan Meldrim, Captain, Sacramento, Calif.
GAJAN, Isidore Wilmot, Jr., 1st Lieut., New Iberia, La.
GOEN, Rayburne Wyndham, 1st Lieut., Denver.
HANLEY, James Leo, 1st Lieut., Rochester, Minn.
HELBLING, Franklin Kirkland, 1st Lieut., South Pasadena, Calif.
HINES, Leonard Wayne, 1st Lieut., Santa Rosa, Calif.
HOFFMAN, Richards Holmes, 1st Lieut., Bellefonte, Pa.
KAISER, William Frederick, Jr., 1st Lieut., Portland, Ore.
KASLOW, Arthur Louis, 1st Lieut., Palo Alto, Calif.
KEARNEY, Sanborn Gale, 1st Lieut., Bakersfield, Calif.
LECLERCQ, George Theodore, Captain, Boston.
LONG, Arthur Paige, Captain, Needham, Mass.
LYON, Thomas Pinkney, 1st Lieut., Gilroy, Calif.
MULLER, Harold Powers, Captain, Oakland, Calif.
OETJEN, Leroy H., 1st Lieut., Leesburgh, Fla.
OWSLEY, Guy Argyle, Captain, Hartford City, Ind.
PETERMAN, James E., 1st Lieut., Indiana, Pa.
RYAN, Bernard Francis, 1st Lieut., Ahwahnee, Calif.
SARKISIAN, Milton Vahan, 1st Lieut., Sacramento, Calif.
SPECKER, Lewis, Captain, Sacramento, Calif.
STRUBLE, Gilbert Carl, Captain, Ottumwa, Iowa.
UPSHUR, Alfred Parker, Lieut. Col., New York.
WARRINGTON, William Rich, 1st Lieut., Portland, Ore.

#### Orders Revoked

McANALLY, William Jefferson, Jr., 1st Lieut., New Orleans.
WILSON, Galo Edward, Captain, Seattle.

## FIRST CORPS AREA

The following additional medical reserve corps officers have been ordered to extended active duty by the Commanding General, First Corps Area, which comprises the states of Maine, Vermont, New Hampshire, Rhode Island, Massachusetts and Connecticut:

AXELROD, George, Captain, Clinton, Mass., Fort Devens, Mass.
CASHMAN, Justin L., 1st Lieut., North Haven, Conn., Fort Devens, Mass.
COTTER, Joseph R., 1st Lieut., Charleston, Mass., Fort Devens, Mass.
DeMINICO, Luigi B., 1st Lieut., Brighton, Mass., Fort Devens, Mass.
DOOLEY, Francis M., Captain, Portland, Maine, Fort Devens, Mass.
DUNKLE, Philip L., 1st Lieut., Wallum Lake, R. I., Fort Devens, Mass.
ELIAS, Anthony N., 1st Lieut., Taunton, Mass., Fort Devens, Mass.
FINEBERG, Meyer H., Major, Boston, Fort Devens, Mass.
FLANAGAN, Donald J., 1st Lieut., Somersworth, N. H., Camp Edwards, Mass.
GRABFIELD, Gustave P., Colonel, Boston, Memphis, Tenn.
HAMILTON, John S. M., 1st Lieut., Stamford, Conn., Fort Devens, Mass.
HENDERSON, John W., Jr., Captain, Worcester, Mass., Fort Devens, Mass.
HERRMAN, Albert E., Major, Waterbury, Conn., Camp Edwards, Mass.
LEWIS, Frank E., Major, Nantucket, Mass., Camp Edwards, Mass.
SHEINBERG, Jules H., 1st Lieut., Brighton, Mass., Fort Adams, R. I.
TAYLOR, Richard C., 1st Lieut., Spencer, Mass., Camp Edwards, Mass.
TUNICK, George L., 1st Lieut., Greenwich, Conn., Fort Devens, Mass.
WALKER, Lewell S., Jr., 1st Lieut., Middlebury, Vt., Fort Devens, Mass.

### Orders Revoked

ASHER, Leonard M., 1st Lieut., Boston.
BLACK, Harry, 1st Lieut., Lowell, Mass.
CUMMINGS, Harwood W., 1st Lieut., Greenfield, Mass.
FEELEY, John R., 1st Lieut., Bangor, Maine.
GLADSTONE, Robert W., 1st Lieut., Pittsfield, Mass.
KEES, Philip A., Captain, Longmeadow, Mass.
LEAVITT, Benjamin, 1st Lieut., Fall River, Mass.
LEVY, William S., 1st Lieut., Woonsocket, R. I.

## THIRD CORPS AREA

The following additional medical reserve corps officers have been ordered to extended active duty by the Commanding General, Third Corps Area, which comprises the states of Pennsylvania, Virginia, District of Columbia and Maryland:

ALBRIGHT, Chester Harrison, Jr., 1st Lieut., Harleysville, Pa., Fort George G. Meade, Md.
BARNES, Russell Henry, 1st Lieut., Tyrone, Pa., Indiantown Gap Military Reservation, Indiantown Gap, Pa.
BENSY, Oliver Robert, Captain, Pittsburgh, Camp Lee, Va.
BERNSTEIN, Albert Alexander, 1st Lieut., Scranton, Pa., Fort Belvoir, Va.
BITMAN, Joseph, 1st Lieut., Abington, Pa., Camp Davis, N. C.
BOSS, Myron Theodore, 1st Lieut., Baltimore, Camp Davis, N. C.
CAMBEST, Michael Albert, Jr., 1st Lieut., Pittsburgh, Fort Belvoir, Va.
CANUSO, Nicholas Andrew, 1st Lieut., Philadelphia, Fort Bragg, N. C.
CAWLEY, Frank Thomas, 1st Lieut., Washington, D. C., Fort Belvoir, Va.
CRIGLER, Fielding Jason, Captain, Charlottesville, Va., Fort Belvoir, Va.
CROCKETT, Edward David, 1st Lieut., Washington, D. C., Fort Bragg, N. C.
GATES, John Stoever, 1st Lieut., Mount Joy, Pa., General Dispensary, U. S. Army, Baltimore.
GIORDANO, Anthony Mariano, 1st Lieut., Reading, Pa., Camp Davis, N. C.
GOLDMAN, Louis H., 1st Lieut., Philadelphia, Fort Benning, Ga.
GROSSMAN, Aaron, Captain, Allentown, Pa., Camp Polk, La.
HOFFMAN, Carl Cooke, 1st Lieut., Harrisburg, Pa., Fort George G. Meade, Md.
HRESAN, Michael George, 1st Lieut., St. Clair, Pa., Camp Davis, N. C.
HULBURT, Richard Stephen, 1st Lieut., Washington, D. C., Fort George G. Meade, Md.
HUROK, Oscar Joseph, Captain, Galeton, Pa., Fort Eustis, Va.
HUTCHISON, Henry Edward, 1st Lieut., McKeesport, Pa., Camp Davis, N. C.
JARRETT, Marion Fisher, 1st Lieut., Farnham, Va., Fort Eustis, Va.
KLITCH, George Martin, 1st Lieut., Harrisburg, Pa., Camp Lee, Va.
LaFRATTA, Carl William, Captain, Richmond, Va., Fort Belvoir, Va.
LIEBMAN, Joseph, 1st Lieut., Norton, Va., Camp Lee, Va.
MacMINN, Charles Clayton, Jr., 1st Lieut., New Oxford, Pa., Fort Belvoir, Va.
MARTIN, Josef Ernest, 1st Lieut., Kingston, Pa., General Dispensary, U. S. Army, Philadelphia.
MOORE, James Irving, 1st Lieut., Catonsville, Md., Selective Service for State of Maryland, 5th Regiment Armory, Baltimore.
MUZI, Americo Joseph, 1st Lieut., Old Forge, Pa., Camp Davis, N. C.
NORTON, Fred Lee, 1st Lieut., Belle Vernon, Pa., Camp Davis, N. C.
O'BOYLE, James Patrick, 1st Lieut., Dunmore, Pa., Camp Davis, N. C.
PORTER, Walter Albert, Captain, Hillsville, Va., Fort Belvoir, Va.
RUGH, J. L. Keith, 1st Lieut., Bolivar, Pa., Camp Davis, N. C.
STEELE, Frederic Hohman, Captain, Huntingdon, Pa., Fort Story, Va.
TEMPLETON, Frederick Glenn, 1st Lieut., Warren, Pa., Fort Belvoir, Va.
TERRY, William Parker, 1st Lieut., Charlotte Court House, Va., Fort Belvoir, Va.
THOMAS, Harold Wilson, Major, Arnold, Pa., Fort Belvoir, Va.
TOMPKINS, Pendleton Souther, Captain, Philadelphia, Fort Bragg, N. C.
TURNBLACER, Charles Burkle, 1st Lieut., Butler, Pa., Carlisle Barracks, Pa.

### Orders Revoked

BARKOFF, Samuel, 1st Lieut., Baltimore.
DRAYER, Calvin Searle, Captain, Upper Darby, Pa.
KISER, Jefferson Bishop, 1st Lieut., Emporia, Va.
LAULER, John William, 1st Lieut., Jersey Shore, Pa.
McKEE, Carlisle Emerson, 1st Lieut., Pittsburgh.
NEALE, Milton Mercer, Jr., 1st Lieut., Heathsville, Va.
STAPINSKI, Stanley Michael, 1st Lieut., Glenn Lyon, Pa.

## FIFTH CORPS AREA

The following additional medical reserve corps officers have been ordered to active duty by the Commanding General, Fifth Corps Area, which comprises the states of Ohio, West Virginia, Indiana and Kentucky:

BOIARSKY, Julius L., 1st Lieut., Charleston, W. Va., Fort Knox, Ky.
BOSSARD, Samuel L., Major, Gallipolis, Ohio, Fort Knox, Ky.
BOWERS, Jesse W., Lieut. Col., Fort Wayne, Ind., Fort Benjamin Harrison, Ind.
BRINKER, Herbert J., 1st Lieut., Cincinnati, Fort Thomas, Ky.
BROWN, Harry M., 1st Lieut., Indianapolis, Fort Knox, Ky.
CARRIGG, Lawrence G., 1st Lieut., Bowling Green, Ky., Fort Knox, Ky.
CHILDS, Wallace E., 1st Lieut., Princeton, Ind., Fort Knox, Ky.
ELLIS, Stephen R., 1st Lieut., Versailles, Ind., Fort Knox, Ky.
FEISTKORN, Karl H., 1st Lieut., Marion, Ohio, Fort Hayes, Ohio.
FISH, Carlos A., Jr., 1st Lieut., Louisville, Ky., Fort Knox, Ky.
JONES, Edward V., Jr., 1st Lieut., Morgantown, W. Va., Fort Knox, Ky.
KRIZ, Joseph R., Captain, Toledo, Ohio, Fort Knox, Ky.
LAWRENCE, Leslie L., Captain, Canton, Ohio, Louisville, Ky.
MATUSKA Walter H., Captain, Ottawa, Ohio, Fort Knox, Ky.
MERICLE, Earl W., Captain, Indianapolis, Fort Benjamin Harrison, Ind.
MILLER, James W., 1st Lieut., Greensburg, Ky., Fort Knox, Ky.
NICHOLS, William E., 1st Lieut., Manchester, Ky., Fort Knox, Ky.
NIEMAN, Roland E., 1st Lieut., Cincinnati, Fort Knox, Ky.
NORWICK, Sydney S., 1st Lieut., Indianapolis, Fort Knox, Ky.
O'BELL, John J., 1st Lieut., Kingsville, Ohio, Fort Knox, Ky.
OCKULY, Edward F., 1st Lieut., Toledo, Ohio, Fort Knox, Ky.
POTTER, Frederick C., Major, Cuyahoga Falls, Ohio, Fort Knox, Ky.
REED, Roger R., 1st Lieut., Indianapolis, Fort Knox, Ky.
RITTEMAN, George W., Captain, Indianapolis, Fort Benjamin Harrison, Ind.
SALMON, James L., Captain, Closplint, Ky., Fort Knox, Ky.
SEMONS, Robert J. E., 1st Lieut., Carey, Ohio, Fort Knox, Ky.
SMITH, Beecher L., Captain, Columbus, Ohio, Fort Hayes, Ohio.
SRULOWITZ, Jack, 1st Lieut., Belpre, Ohio, Fort Hayes, Ohio.
STEPHENS, Wilson P., 1st Lieut., Jenkins, Ky., Fort Knox, Ky.
WATSON, Herman L., 1st Lieut., Evansville, Ind., Fort Knox, Ky.
WILSON, Arnold, 1st Lieut., Welch, W. Va., Fort Knox, Ky.

## SIXTH CORPS AREA

The following additional medical reserve corps officers have been ordered to extended active duty by the Commanding General, Sixth Corps Area, which comprises the states of Wisconsin, Illinois and Michigan:

BRANDEL, John M., 1st Lieut., Owosso, Mich., Station Hospital, Fort Sam Houston, Texas.
CASTALDO, Enzo Frank, 1st Lieut., Chicago, 215th General Hospital, Fort Custer, Mich.
CHECHILE, Dominic T., 1st Lieut., Chicago, Elementary Flying School, Cuero, Texas.
CRANE, Warren B., 1st Lieut., Kalamazoo, Mich., Post Surgeon's Office, Fort Custer, Mich.
FARMER, Donald F., 1st Lieut., Chicago, U. S. Army Induction Station, Chicago.
GEHRINGER, Norman F., 1st Lieut., Richmond, Mich., Medical Replacement Center, Infirmary, Camp Grant, Ill.
GOLDT, Henry B., 1st Lieut., Chicago, U. S. Army Induction Station, Chicago.
GROSSMAN, Solomon C., 1st Lieut., Detroit, U. S. Army Induction Station, Chicago.
HANSON, Frederick N., 1st Lieut., Eloise, Mich., Medical Replacement Center, Camp Grant, Ill.

HINKO, Edward N., 1st Lieut., Plymouth, Mich., Station Hospital, Fort Custer, Mich.
JASINSKI, Thaddeus, 1st Lieut., Chicago, U. S. Army Induction Station, Chicago.
KORANSKY, David S., 1st Lieut., Chicago, U. S. Army Induction Station, Chicago.
MARKS, Ben, 1st Lieut., Detroit, U. S. Army Induction Station, Detroit.
McCAIN, George H., 1st Lieut., Battle Creek, Mich., 23d Evacuation Hospital, Fort Custer, Mich.
MULLENMEISTER, Hugh F., Captain, Battle Creek, Mich., 11th Station Hospital, Fort Custer, Mich.
MURPHY, Michael R., 1st Lieut., Cadillac, Mich., 119th Field Artillery, Lansing, Mich.
OLSON, William A., 1st Lieut., Greenwood, Wis., 32d Division, Camp Beauregard, La.
PAULY, Roman C., 1st Lieut., Milwaukee, Station Hospital, Camp Grant, Ill.
PINC, Otto C., Captain, Riverside, Ill., Elementary Flying School, Corsicana, Texas.
ROBERSON, Brooks L., 1st Lieut., Wood River, Ill., U. S. Army Induction Station, Chicago.
ROBERSON, William V., 1st Lieut., Wood River, Ill., U. S. Army Induction Station, Chicago.
ROMANO, John Emil, 1st Lieut., Congress Park, Ill., U. S. Army Induction Station, Milwaukee.
SAXON, Michael R., 1st Lieut., Oswego, Ill., Station Hospital, Fort Bliss, Texas.
SCHUTZMAN, Benjamin M., 1st Lieut., Detroit, 5th Division, Fort Custer, Mich.
SIMMONS, Warren K., 1st Lieut., Chicago, Station Hospital, Fort Bliss, Texas.
TANNENHOLZ, Harold S., 1st Lieut., Battle Creek, Mich., Medical Replacement Center, Infirmary, Camp Grant, Ill.
TEBOREK, Roy F., 1st Lieut., Chicago, U. S. Army Induction Station, Chicago.
URIST, Maurice D., 1st Lieut., Manteno, Ill., U. S. Army Induction Station, Chicago.
WAGNER, Jack, 1st Lieut., Chicago, 215th General Hospital, Fort Custer, Mich.
WALLER, James B., 1st Lieut., Decatur, Ill., Medical Replacement Center, Infirmary, Camp Grant, Ill.
YOUNG, Francis W., 1st Lieut., Chicago, U. S. Army Induction Station, Chicago.
ZARCONE, Vincent P., 1st Lieut., Decatur, Ill., 103d Corps Area Battalion, Fort Sheridan, Ill.

### Orders Revoked

LARIMORE, Granville W., 1st Lieut., Chicago.
MOLL, Clarence D., Major, Detroit.
ROBINSON, Ralph D., 1st Lieut., Moberly, Mo.
SCHIELE, William C., Major, Galena, Ill.
THEIS, Edward H., Major, Granite City, Ill.

## SEVENTH CORPS AREA

The following additional medical reserve corps officers have been ordered to extended active duty by the Commanding General, Seventh Corps Area, which comprises the states of North Dakota, South Dakota, Minnesota, Nebraska, Iowa, Kansas, Missouri, Arkansas and Wyoming:

BAILEY, William Harold, 1st Lieut., St. Louis, Corps Area Service Command, Station Hospital, Fort Leonard Wood, Mo.
BRANHAM, Donald Stark, Captain, Albert Lea, Minn., 56th Coast Artilley, Harbor Defenses, San Francisco.
HELLUMS, Julius Hopwood, 1st Lieut., Dumas, Ark., 56th Coast Artillery, Harbor Defenses, San Francisco.
JENSEN, Nathan Kenneth, Captain, Minneapolis, Corps Area Service Command Station Hospital, Fort Snelling, Minn.
KIMBALL, Gilbert Leslie, 1st Lieut., DeQueen, Ark., Corps Area Service Command Station Hospital, Fort Riley, Kan.
RANKER, Clarence Andrew, 1st Lieut., Powell, Wyo., Corps Area Service Command Induction Station, Jefferson Barracks, Mo.
SAUNDERS, Everett Lewis, 1st Lieut., Independence, Mo., Corps Area Service Command Induction Station, Jefferson Barracks, Mo.
STENSAAS, Carl Oscar, 1st Lieut., Lindsborg, Kan., Corps Area Service Command Induction Station, Fort Snelling, Minn.
TREHARNE, Frank Edwin, 1st Lieut., Independence, Mo., Corps Area Service Command Induction Station, Fort Leavenworth, Kan.
TROWBRIDGE, Barnard Cole, 1st Lieut., Kansas City, Mo., Corps Area Service Command, Station Hospital, Fort Leonard Wood, Mo.
TUBOR, Robert Bruce, 1st Lieut., Hibbing, Minn., Camp J. T. Robinson, Ark.
VOLLMER, Frederick John., 1st Lieut., Grand Forks, N. D., Induction Station, Jefferson Barracks, Mo.
WIECHMAN, Frederick Herman, Captain, Montgomery, Minn., Station Complement, Fort Riley, Kan.
WILMOTH, Luther Harmon, Captain, Lander, Wyo., Induction Station, Jefferson Barracks, Mo.
WILSON, Donald Jasper, Major, Omaha, Corps Area Service Command, Station Hospital, Fort Leonard Wood, Mo.
WOERN, William Henry, 1st Lieut., England, Ark., Corps Area Service Command Induction Station, Fort Snelling, Minn.
YANCEY, Daniel Layton, Jr., Major, Springfield, Mo., Corps Area Service Command Station Hospital, Fort Leonard Wood, Mo.
ZAESKE, Edward Vernon, 1st Lieut., Charter Oak, Iowa, 1st Medical Regiment, Fort Ord, Calif.

### Orders Revoked

ARNY, Frederick P., 1st Lieut., Preston, Mo.
BLANKENSHIP, George W., 1st Lieut., Boonville, Mo.
BROWN, Merle J., Captain, Davenport, Iowa.
GUCCIANI, Joseph B., 1st Lieut., St. Louis.
HANNA, Joe T. A., 1st Lieut., Scottsbluff, Neb.
HAYS, Albert T., 1st Lieut., Minneapolis.
HEPPERLEN, Harry M., Captain, Beatrice, Neb.
PALMER, Henry P., 1st Lieut., Scott City, Kan.

## EIGHTH CORPS AREA

The following additional medical reserve corps officers have been ordered to active duty by the Commanding General, Eighth Corps Area, which comprises the states of Colorado, Arizona, New Mexico, Oklahoma and Texas:

ADLER, Stuart Welsh, 1st Lieut., Albuquerque, N. M., Station Hospital, Fort Bliss, Texas.
ASHBY, John Edmund, Captain, Dallas, Texas, Station Hospital, Fort Sam Houston, Texas.
BUNGARDT, Alfred Hiller, Jr., 1st Lieut., Oklahoma City, Station Hospital, Camp Barkeley, Texas.
CAFFEE, William Milton, Lieut. Col., Dallas, Texas, Station Hospital, Camp Hulen, Texas.
DASHIELL, Albert M., 1st Lieut., Austin, Texas, Station Hospital, Fort Sam Houston, Texas.
DAY, Roy Willard, Jr., 1st Lieut., Magdalena, N. M., Ellington Field, Texas.
DUEWELL, Rudolph Henry, 1st Lieut., Durant, Okla., Station Hospital, Fort Sill, Okla.
ETTER, Forrest Stayton, Major, Bartlesville, Okla., Station Hospital, Fort Sill, Okla.
FAIR, George Kenneth, Captain, Galveston, Texas, Station Hospital, Fort Sam Houston, Texas.
HARRISON, Daniel Allen, Jr., 1st Lieut., Kingsville, Texas, Station Hospital, Fort Sam Houston, Texas.
HELFER, Lewis M., 1st Lieut., San Antonio, Texas, Station Hospital, Fort Sill, Okla.
HUGHES, James Gillian, 1st Lieut., Oklahoma City, Station Hospital, Fort Sill, Okla.
JACOBSON, Harry, 1st Lieut., Post, Texas, Ellington Field, Texas.
JONES, Ernest Lee, 1st Lieut., Longview, Texas, 36th Division, Camp Bowie, Texas.
KAPLAN, Morris, 1st Lieut., Denver, Ellington Field, Texas.
KENNEDY, Louis James, 1st Lieut., Clinton, Okla., Station Hospital, Fort Sill, Okla.
LONG, James W., 1st Lieut., Port Arthur, Station Hospital, Fort Sam Houston, Texas.
McCLURE, Harold M., 1st Lieut., Chickasha, Okla., Station Hospital, Fort Sill, Okla.
McKNIGHT, William Hodges, 1st Lieut., Fort Worth, Texas, Ellington Field, Texas.
PENIX, Lex L., 1st Lieut., Denver, Station Hospital, Fort Sam Houston, Texas.
PITT, Charles Kermit, 1st Lieut., Denver, Station Hospital, Fort Bliss, Texas.
SCHWAB, Irving H., 1st Lieut., Colorado Springs, Colo., U. S. Army Recruiting Station, Oklahoma.
SHANKEL, Harry Weylman, 1st Lieut., Denver, Station Hospital, Fort Sam Houston, Texas.
SHARP, James Calvin, Captain, Corpus Christi, Texas, Camp Wallace, Texas.
SHUPE, Reed Dalton, Captain, Phoenix, Ariz., Basic Flying School, San Angelo, Texas.
STRECKER, William E., 1st Lieut., Oklahoma City, Station Hospital, Fort Sill, Okla.
TOM, Henry K., Captain, Port Arthur, Texas, 36th Division, Camp Bowie, Texas.
WARRENBURG, Clarence B., Captain, Phoenix, Ariz., Station Hospital, Fort Bliss, Texas.
ZARR, Luther Lynn, 1st Lieut., Houston, Texas, 211th Coast Artillery, Camp Hulen, Texas.

### Orders Revoked

BARNACLE, Clarke Horace, Captain, Denver.
COTTON, William Walker, 1st Lieut., Atoka, Okla.
RUCKER, Ralph Weller, 1st Lieut., Bartlesville, Okla.
SANGER, Paul Griffith, 1st Lieut., Vinita, Okla.
WIERNIK, Harris, 1st Lieut., Lovelady, Texas.

## NEW NAVY MEDICAL OFFICERS

The following candidates were appointed assistant surgeons in the Navy, with the rank of Lieutenant (junior grade), Medical Corps, to rank from March 20:

ALBRITTAIN, John W., Baltimore.
BERGMAN, John H., Charleston, W. Va.
BUNN, James H., Jr., Smithfield, N. C.
BURNS, Francis M., Kearny, N. J.
BUTLER, Fred A., Chattahoochee, Fla.
CHESKO, Clement C., Washington, D. C.
DeLAMATER, James N., Pasadena, Calif.
DOBSON, John P., Manhasset, L. I., N. Y.
ETTER, Harry S., Shippensburg, Pa.
FOWLER, James T., Jr., El Paso, Texas.
GRACE, William J., Swampscott, Mass.
GRESSLY, Donald W., Beaver, Pa.
GRISWOLD, Wait R., Indianapolis.
HART, John C., Los Angeles.
HURST, Gerald W., Hanna, Wyo.
JONES, Horace Leonard, Jr., Richmond, Va.
KEARNEY, Edward A., Jr., Boston.
LANGSTON, William G., New York.
MAMONAS, Christopher, Pittsfield, Mass.
MARTIN, Marion T., Memphis, Tenn.
McATEER, Gerald H., Washington, D. C.
MOUNT, Robert A., Houston, Texas.
OLENICK, Everett J., Oak Park, Ill.
PASSMORE, Glen G., San Antonio, Texas.
PITTARD, Knox, Jr., Anson, Texas.
POLLARD, Joseph P., Alexandria, Va.
RADER, George S., Indianapolis.
ROBERTSON, Robert F., Los Angeles.
ROWE, John B., Flint, Mich.
SCHULTZ, Arthur L., Laguna Beach, Calif.
WILLIAMS, Robert Hamilton, Seattle.
YOUNG, Mark I. H., Buffalo.

## DOCTORS FOR BRITAIN

More than five hundred applications have been received to date in response to the recent request of the British Red Cross to the American Red Cross for one thousand physicians to serve in Great Britain, and several hundred of them now are in the process of being investigated, the Subcommittee on Medical Personnel for Britain, of the Division of Medical Sciences of the National Research Council, announced in Chicago May 2 following a meeting at the headquarters of the American Medical Association. The National Research Council and the American Medical Association are cooperating with the American Red Choss in endeavoring to meet the British request.

Attending the meeting in Chicago May 2 were Dr. O. H. Perry Pepper, Philadelphia, chairman of the subcommittee; Dr. Morris Fishbein, Editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, and Dr. Evarts A. Graham, St. Louis, members of the subcommittee; Dr. G. D. Williams of the American Red Cross; Lieut. Col. Charles G. Hutter of the United States Army Medical Corps; Dr. Olin West, Secretary of the American Medical Association, and Dr. R. G. Leland of the American Medical Association.

The subcommittee announced that the names of all applicants are being checked with the biographic files of the American Medical Association.

Within the next few days formal circularization will be made by the American Red Cross of all physicians in the United States under the age of 45 who may be qualified for this service, it was announced.

## TESTING A NEW STEEL HELMET

The War Department announces that tests are being made at Fort Benning, Ga., of a new steel helmet, which, if adopted, should provide greater protection to the head and be more comfortable than the present type of helmet. The proposed new helmet weighs about 3 ounces more than the present one and is made of tougher steel, with a dome shaped top which extends down in front to cover the forehead without impairing vision and down the sides of the head and back of the neck. The first World War statistics show that about 12 per cent of all wounds inflicted were head wounds. The steel in the proposed new helmet is sufficiently tough to withstand the majority of shrapnel balls and a high percentage of shell splinters, grenade fragments and spent rifle and machine gun bullets. The front of the new helmet forms a cap style visor and the rear is slightly flanged, so that rain will clear the collar opening. The helmet weighs about 2½ pounds and is lined with fiber designed for use as a field hat to replace the present overseas cap.

## EXPERIMENTAL STUDY OF SOLDIERS' CLOTHING

The Fatigue Laboratory of Harvard University, Cambridge, Mass., will undertake an experimental study under simulated field conditions of clothing for soldiers. Thirty volunteers will march on a treadmill for specified lengths of time between four and eight hours, but not oftener than once every ten days, wearing regulation army clothing and carrying full field equipment. Each of the thirty soldiers during these experiments will be subjected to studies of their water and salt balances and during the ten minute rest periods will be weighed, have their feet examined and their temperature, pulse and blood pressure taken. The treadmill will be heated to simulate the heat of tropical countries, and the soldiers' fatigue reaction will be checked carefully. Conditions in the treadmill will be adjusted also to simulate conditions in various other climates. Efforts will thus be made to discover the best types of underwear, socks, shoes and later other articles of clothing. A study of the treatment of foot ailments will also be undertaken, as well as the possibility of replacing leather soles of shoes with cork or rubber or some other compound.

## MEDICAL DEPARTMENT TRAINING PROGRAM

A broad general medical training program has been set in motion by the War Department to train officers, nurses, enlisted men and civilians for duty in military hospitals and in the field forces. The largest class ever to take a refresher course at the medical field service school at Carlisle Barracks, Pa., is now in training, including five hundred and sixty-eight reserve, national guard and regular army officers and one hundred technicians. About fifteen thousand enlisted specialists have reported for three months courses of instruction at special service schools located at fixed general hospitals and, in addition, about forty different refresher courses in hospital administration are being given in six different general hospitals. The courses in hospital administration are designed to acquaint the reserve and national guard officers with the procedures and various forms of the military service. About 75 per cent of the medical department's enlisted strength requires technical instruction. It is estimated that twenty thousand qualified medical technicians of various kinds will be required for an army of one million four hundred thousand. Facilities to instruct eighteen thousand enlisted technicians each year in three months courses are available at the following army hospitals: Letterman General Hospital, San Francisco; Fitzsimons General Hospital, Denver; William Beaumont General Hospital, El Paso, Texas; Army and Navy General Hospital, Hot Springs National Park, Ark.; Station Hospital, Fort Sam Houston, Texas; Army Medical Center, Washington, D. C., and the Medical Field Service School, Carlisle Barracks, Pa.

## SIXTEENTH MEDICAL REGIMENT AT FORT DEVENS

The following medical officers are on duty with the 16th Medical Regiment at Fort Devens, Mass.:

BENNETT, Austin W., Captain, Regular Army, Fort Devens, Mass.
GOULD, George I., 1st Lieut., Biddeford, Maine.
HIEHLE, Wilbur W., Captain, Regular Army, Fort Devens, Mass.
JOSLIN, Allan P., 1st Lieut., Boston.
KELLY, Alexander P., Lieut. Col., Regular Army, Fort Devens, Mass.
KNEPP, James W., Lieut. Col., Bridgeport, Conn.
MATTERA, Vincent J., 1st Lieut., Providence, R. I.
OLANS, Sidney, 1st Lieut., Somerville, Mass.
PAGLIARO, Joseph J., 1st Lieut., Derby, Conn.
PALMER, Jay J., Captain, Regular Army, Fort Devens, Mass.
SCHILLER, Irving W., 1st Lieut., Boston.
VOEGTLY, John H., Captain, Regular Army, Fort Devens, Mass.
WEINSTEIN, Barnett, 1st Lieut., Peabody, Mass.

# ORGANIZATION SECTION

## AMERICAN MEDICAL ASSOCIATION ON TRIAL

THE TRIAL OF THE CASE OF THE UNITED STATES OF AMERICA

VS.

THE AMERICAN MEDICAL ASSOCIATION, A CORPORATION, THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA, A CORPORATION, THE HARRIS COUNTY MEDICAL SOCIETY, AN ASSOCIATION, THE WASHINGTON ACADEMY OF SURGERY, AN ASSOCIATION, ARTHUR CARLISLE CHRISTIE, COURSEN BAXTER CONKLIN, JAMES BAYARD GREGG CUSTIS, WILLIAM DICK CUTTER, MORRIS FISHBEIN, THOMAS ALLEN GROOVER (DECEASED), ROBERT ARTHUR HOOE, ROSCO GENUNG LELAND, THOMAS ERNEST MATTINGLY, LEON ALPHONSE MARTEL, FRANCIS XAVIER MCGOVERN, THOMAS EDWIN NEILL, EDWARD HIRAM REEDE, WILLIAM MERCER SPRIGG, WILLIAM JOSEPH STANTON, JOHN OGLE WARFIELD JR., OLIN WEST, PRENTISS WILLSON, WILLIAM CREIGHTON WOODWARD, WALLACE MASON YATER, JOSEPH ROGERS YOUNG.

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MARCH 27 (CONTINUED)

### TESTIMONY OF DR. CLAUDE C. CAYLOR

DIRECT EXAMINATION

*By Mr. Leahy:*

*Q.*—I am showing you a photostatic copy of a letter, the original of which I think was shown you when you were on the stand before. Will you look at that now and see if you can recall having seen and identified the original of it? *A.*—Yes, sir; I did.

*Q.*—Doctor, you sent that letter out, did you? *A.*—Yes, sir.

*Q.*—Do you recall now under whose direction, if anybody's, the letter was sent? *A.*—This was sent at the direction of the Medical Staff of Providence Hospital.

*Q.*—What instructions, if any, had you received with reference to the letter before you sent it out?

*Mr. Lewin:*—From whom?

*Mr. Leahy:*—From the Medical Staff.

*A.*—It was simply to notify the men of this recommendation of the American Medical Association that all members of our staff—the recommendation was that all members of our staff should belong to the American Medical Association or one of its constituent bodies.

*Q.*—When you sent out the letter had you any instructions as to the form of the letter or the words to be used? *A.*—No, sir. That was left to my discretion.

*Q.*—And following sending out the letter, Doctor, did you ever do anything further toward checking up? *A.*—No; I never did anything further toward checking up. As I recall, I sent this letter to six doctors, and each one of those doctors spoke to me personally about this without ever writing an answer.

*Q.*—Do you recall now, as a matter of fact, whether all those doctors actually joined the Medical Society or not? *A.*—I don't know, as a matter of fact, but my impression is that they all did, sir.

*Q.*—Have you members on the staff now who are not members of the local medical society? *A.*—Yes, sir.

*Q.*—And do you recall now whether at any time you considered that the recommendation, as you have stated, of the American Medical Association was a threat or a form of coercion against your hospital? *A.*—No, sir; I never thought it was a threat.

CROSS EXAMINATION

*By Mr. Lewin:*

*Q.*—Doctor, you were secretary of the Executive Staff, were you not? *A.*—Yes, sir.

*Q.*—And you signed the minutes, did you not, of the meeting of the Executive Staff at Providence for Feb. 17, 1938? *A.*—Yes, sir.

*Q.*—It would be your testimony, then, that shortly after you sent out this letter you were able to note general compliance with the recommendation of the A. M. A. on the part of doctors connected with your staff? *A.*—Yes, sir.

### TESTIMONY OF SISTER ROSA

DIRECT EXAMINATION

*By Mr. Leahy:*

*Q.*—Sister Rosa, you are superintendent of Providence Hospital, are you not? *A.*—Yes, sir.

*Q.*—How long have you been superintendent, Sister? *A.*—Four years, I think, this month.

*Q.*—Before coming to Providence Hospital where were you located? *A.*—I was stationed in Emmittsburg.

*Q.*—In what capacity were you engaged there? *A.*—I was Protectress at the Mother House.

*Q.*—When you came to Providence Hospital as superintendent, what were your duties generally, Sister? *A.*—I supervised the entire hospital, in all departments.

*Q.*—Do you recall now when there came a time that you wanted a residency in surgery approved at Providence Hospital? *A.*—Yes, sir; I do.

*Q.*—Do you recall who it was that took that matter up for you over there? *A.*—Dr. Caylor.

*Q.*—Do you recall that there came a time when an inspection was made of the hospital? *A.*—Yes.

*Q.*—Was that made by the American Medical Association through its representative? *A.*—Yes.

*Q.*—Do you remember the name Dr. Peterson? *A.*—Yes.

*Q.*—Do you recall whether he was there at your hospital? *A.*—Yes, sir; I think he was.

*Q.*—Sister, does Providence Hospital have inspections made of it quite frequently? *A.*—Yes.

*Q.*—What is the purpose of those inspections? *A.*—Well, we had this inspection to give us permission to train residents. That was why I wanted it. And we do have inspections of our school of nursing twice a year, from New York State and the District, and we have had inspections by the College of Surgeons and the American Medical Association.

*Q.*—What is the purpose of the inspections which are made by the American Medical Association? *A.*—To raise our standards, I should think. I requested them to come so that I could know wherein we were making mistakes in regard to training interns, and we were trying then to raise our standards for the training of residents.

*Q.*—In surgery? *A.*—Yes.

*Q.*—Do you recall that you finally got that privilege? *A.*—Yes, sir; we did.

*Q.*—Do you remember when it was, what year, you got approval for residency in surgery? *A.*—I think it was 1939.

*Q.*—Do you remember now whether, after the inspection was made of the hospital, a report came in to you as to what the inspector found? *A.*—Yes.

*Q.*—Do you recall whether you read that report over, yourself? *A.*—I read it over several times, but I just cannot give you an accurate account of everything that was in it, just now.

*Q.*—Do you recall having written a letter, which I am now going to show you, Sister, after receiving that report? *A.*—Yes; I do.

*Q.*—I am going to show you a letter which has been introduced in evidence here, dated Aug. 27, 1937. Is that your signature, Sister (indicating)? *A.*—Yes.

*Q.*—You were then the acting superintendent? *A.*—Yes.

*Q.*—Would you look that over, please, Sister, and see if you can recall that letter? *A.*—Yes; I do.

*Q.*—Do you remember, Sister, the letter of Dr. Peterson or Dr. Cutter which accompanied the report of the inspection made of Providence Hospital? *A.*—No; I do not remember that.

*Q.*—But at this time, when you wrote this letter, I will ask you if it was in connection with this letter which I am now showing you, dated Aug. 21, 1937, and numbered 239. *A.*—This was written by Sister Margaret.

*Q.*—Did you see that letter? *A.*—I don't remember it. Maybe I saw it on the file there, but I do not remember it.

*Q.*—Did you also write another letter to Dr. Cutter of the Council on Medical Education and Hospitals, dated Oct. 12, 1937, which is numbered 241? *A.*—I think this is the letter. I think Dr. Caylor or some of the doctors wrote this letter, if I am not mistaken, and asked me to sign it. I read it and they asked me to sign it to verify what the hospital thought in regard to this matter; that I represented the hospital, and that if I put my name here (indicating) it would verify the statements made in it.

*Q.*—And you did so? *A.*—Yes, sir.

*Q.*—Sister, with reference to any of the suggestions which you recall were made to Providence Hospital after the inspection, were any of them considered by you to be a threat against the hospital? *A.*—Well, you see, I invited these men at this time that I have reference to. I didn't know about Sister Margaret's letter. I am only answering for myself and the letter that I wrote. I invited them to come because I was most anxious to train residents, and these young men were anxious for it and I was backing them up, and I wrote it for them to give us constructive criticism; and that is what I considered it.

*Q.*—You did not consider it coercion or a threat or anything of that kind? *A.*—No, sir. I never thought of that, any more than when the District Nursing Board examines us and makes recommendations. We always try to carry them out 100 per cent. But I do not consider them a threat, because some of them we can't carry out very well. We try to do the best we can.

*Mr. Leahy:*—This letter has already been read in evidence, but it deals with recommendations of Dr. Peterson's report. It deals with the intern committee, the records which form the only index of the work done by the attending residents and nursing staff, securing of autopsies, medical library, and it says that "Members of the staff who do not belong to the Medical Society have been contacted and at the present time all nonmembers have submitted their applications for membership, so that now with those exceptions all members of our staff are members of the American Medical Association or affiliated with its constituent societies." It is signed by Sister Rosa and Dr. Caylor, who was the secretary.

*Q.*—Sister, at any time do you recall that you discussed matters with Dr. Peterson who made the inspection? *A.*—Yes; I think I did.

*Q.*—In anything which you did in connection with meeting the requirements or the recommendations of any report or any suggestion which was made by Dr. Peterson or the American Medical Association, did you have in mind anything whatsoever about G. H. A.? *A.*—No; I did not.

*Q.*—Do you remember now whether Dr. Selders ever made an application for privileges at Providence Hospital? *A.*—Yes; he did.

*Q.*—When that application was received do you know what was done with it? *A.*—It was sent to the Academy of Surgery.

*Q.*—Do you recall whether a recommendation was received back from the Academy of Surgery? *A.*—Yes; I think it was.

*Q.*—Can you identify this particular exhibit which I just showed you as the letter which was returned by the Academy of Surgery? *A.*—I really do not remember whether I saw it or not. I do not take up the medical end of the staff very much. The doctors transact that.

*Mr. Leahy:*—This has already been identified. It is U. S. Exhibit 448, dated Jan. 31, 1938 and directed to Dr. Valentine Hess, Providence Hospital.

*By Mr. Leahy:*

*Q.*—Who is Dr. Hess, Sister? He was our medical director at that time.

*Mr. Leahy:*

"Dear Dr. Hess:

"The Committee on Hospital Privileges recommends approval of the application of ..... to practice major surgery at your hospital. The committee recommends disapproval of the applications of ....., ....., and Dr. Raymond E. Selders to do major surgery at Providence Hospital.

"Very sincerely yours
"F. C. Fishback, Secretary,
Washington Academy of Surgery."

The name is there, but I am not mentioning the name.

*Mr. Lewin:*—I have no questions of Sister Rosa. I wonder if, in connection with this testimony, however, a paragraph of a letter already in evidence might be called to the jury's attention. This was a letter to Sister Margaret that Sister Rosa did not receive.

THE COURT:—I suppose there is no objection to that.

*Mr. Leahy:*—It is already in evidence.

*Mr. Lewin:*—Yes. I want the jury to bear it in mind in connection with this testimony.

(The witness left the stand.)

*Mr. Lewin:*—It is dated Aug. 21, 1937, from Dr. Cutter to Sister Margaret, superintendent of Providence Hospital. I will simply read this sentence from it (reading):

"As matters stand now we believe quite likely that when this statement is submitted to the Council at its regular meeting early in November internship approval will be withdrawn. Similarly the application for approval of a residency in surgery is held in abeyance pending the adjustment of the present situation."

Then:

"We also append for your information a resolution of our House of Delegates of the American Medical Association."

Then follows the Mundt Resolution, and then:

"According to our analysis there are six members of your staff who are not affiliated with any of the constituent societies of the A. M. A."

*Mr. Leahy:*

"You will recognize that there are several factors that are not in conformity with the Council's regulations governing internship approval. It is a matter of great interest to this office, therefore, to learn whether the recommendations enumerated at the end of the report are acceptable or not."

Then follows the sentence beginning "As matters stand now," which was just read by Mr. Lewin.

(Counsel for both sides approached the bench and conferred with the Court in a low tone.)

*Q.*—Doctor, I show you this letter and ask you if this is the copy of the letter for which we have been waiting? *A.*—This is.

*Mr. Leahy:*

DEFENDANTS' EXHIBIT 53

"Nov. 22, 1937.

"Dr. E. W. Titus,
900 17th Street N.W.,
Washington, D. C.
"Dear Lige:

"Your letter received concerning Dr. Selders, and after inquiry, I found the following facts. He was in Houston during the time stated but he was not anything to brag about. He was quite interested in music, and I found out from some of his associates that he acquired a huge office and tried to attract attention that way. Apparently he has had opportunities to acquire knowledge, but he seems to get in most any one's hair by his pushing tactics. From the reports I have obtained, I do not think that one could give him a most favorable recommendation. I feel sure that you will keep this confidential."

Then the following paragraph:

"I feel that my obstetrics will keep me here and away from the Toronto meeting. It may be possible for me to leave at the last moment.

"With best wishes, I am

"Your friend,
"Robert A. Johnston, M.D."

*By Mr. Leahy:*

*Q.*—Now, Doctor, when you received this letter what weight did you give that letter in regard to your recommendation from the Gynecological Society as to his having general gynecological privileges at Columbia? *A.*—I attached a great deal of importance to this particular letter. I happen to know Dr. Johnston over a great many years: a very prominent man, belongs to a small organization we call the Travel Club, and I see him each December with few exceptions.

*By Mr. Lewin:*

*Q.*—What was the name of it? *A.*—The Gynecological and Obstetrical Travel Club.

*By Mr. Leahy:*

*Q.*—Doctor, there was a question I wished to ask you: In the recommendation which you made from the Gynecological Society did you include others besides Dr. Selders among those who were disapproved? *A.*—Yes.

THE COURT:—Don't mention names.

*Mr. Leahy:*—No; don't mention names.

*The Witness:*—Quite a well known surgeon here in Washington, who applied for major operative obstetrics at Columbia Hospital. We reported unfavorably on him.

*By Mr. Leahy:*

*Q.*—Did you report favorably or unfavorably on any fellows of your Gynecological Society? *A.*—Yes, we did. Two in number, as I recall.

*Q.*—Were they members of your own society? *A.*—They were.

*By Mr. Leahy:*

*Q.*—Doctor, do you recall while you were at Columbia Hospital during the years 1937 and 1938 that you ever saw any questionnaire which was sent out by the Hospital Committee of the District of Columbia Medical Society? *A.*—No.

*Q.*—Did any questionnaire from the District of Columbia Medical Society come before any board, to your knowledge, for any action in the Columbia Hospital?

*The Witness:*—I have seen no questionnaires coming from the Medical Society to the Columbia Hospital Board.

CROSS EXAMINATION

*By Mr. Lewin:*

*Q.*—Dr. Titus, have you got your copy of your letter to Dr. Johnston that brought forth this reply? *A.*—No, I haven't. He didn't send me that.

*Q.*—Did you keep a copy? *A.*—No, I did not.

*Q.*—Do you remember your letter to Dr. Johnston? *A.*—I remember this much of it: that I told him that we had a man who made application to our hospital, meaning Columbia Hospital; that he had given certain references. One of them was in Houston, Texas. And would he at his earliest convenience send me a report of what he knew or could find out about him.

TESTIMONY OF DANIEL L. BORDEN

DIRECT EXAMINATION

*By Mr. Leahy:*

Daniel L. Borden, Washington, a practicing physician, graduated from the George Washington University in 1912. He was in Columbia Hospital for Women for three years, and then at the George Washington University Hospital, and received training under the immediate supervision of his father, who was a surgeon before him. He then went into the service in 1917 for a little over two years. He is Chairman and Senior Operating Surgeon of the Board of Police and Fire Physicians of the District.

*Q.*—Are you also a member of the Academy of Surgery? *A.*—Yes, sir.

*Q.*—How long have you been a member of the Academy of Surgery? *A.*—I was one of its founders.

*Q.*—And in what year was it founded? *A.*—My recollection, about 1933.

*Q.*—And what were the purposes of the foundation of the Academy of Surgery? *A.*—The Academy of Surgery was founded by a group of surgeons in Washington, with the thought of maintaining and if anything increasing the general prestige and standards of practice of surgery in the District of Columbia.

*Q.*—Were you during 1937 and 1938 a member of any committee in the Academy of Surgery? *A.*—I was a member of the Credentials Committee.

*Q.*—And what are the functions of the Credentials Committee in the Academy of Surgery? *A.*—As far back as 1935 the Academy of Surgery discussed the question of some type of standard committee to examine applicants for surgery in the various Washington hospitals, and in 1936 this was started as a committee, and I was appointed to that committee and remained on that committee until I was made president of the Academy of Surgery.

*Q.*—And what year were you made the president of the Academy of Surgery? *A.*—1938.

*Q.*—Doctor, what investigation is made by the Credentials Committee of the application of a surgeon for courtesy privileges in the hospitals in the District of Columbia? *A.*—The Credentials Committee is composed of five men elected originally by the Society, and in recent years they are elected or appointed by the President of the Academy of Surgery. The functions of this committee are to review all applicants for surgical privileges in the various hospitals of Washington: that is to say, such hospitals that care to submit applicants to the Academy for their opinion. This opinion is an advisory one only.

*Q.*—And how is the investigation made into the qualifications of a surgeon? *A.*—The investigation is made by filling out an application blank. That is to say, all applicants are required to fill out an application blank giving all of their qualifications. Then, in addition to that they must give on that blank the names of at least three sponsors: in other words, men who will go on record in writing as stating that they are able and capable of doing general surgery.

*Q.*—Do you recall, Doctor, whether at any time while you were on the Credentials Committee of the Academy of Surgery the application of Dr. Raymond E. Selders came before the Academy for investigation? *A.*—My memory of that is fairly clear. The first time that I knew about it I was called to a meeting at Dr. John Lyons' office. He was then chairman of the Credentials Committee, and the name of Dr. Selders was presented to the committee. At that time we had nothing except his application blank. Dr. Lyons read the application blank to the committee and referred the application blank to Dr. Fred Sanderson for investigation. The following month—it was in January 1938, that Dr. Fred Sanderson reported to the committee his finding. Now, it was the habit, or custom, rather, for the chairman of the Credentials Committee to investigate most of the applicants; but Dr. Lyons on this particular occasion, and I, myself, were planning to go down to a meeting of the Southern Surgical Association. So Dr. Fred Sanderson, because of this situation, was asked by Dr. Lyons at the meeting to investigate the qualifications of Dr. Selders.

*Q.*—And do you recall at what meeting it was that report was made back to the Credentials Committee? *A.*—Well, it is my impression that it took about a month's time, and the meeting at which the report was referred back and finally acted on, if my memory serves me right, was January 1938.

*Q.*—How many were on the Credentials Committee? *A.*—Dr. John Lyons was the chairman of the committee; Dr. Fred Sanderson, Dr. Paul Putzki, Dr. Arch Riddick, and myself.

*Q.*—Do you recall now whether in whatever application Dr. Selders had made and which you had under investigation there were any names of references subscribed thereon? *A.*—In Dr. Selders' application he gave the names of three sponsors: that is, men whom he gave us to sponsor him as being reliable with regard to the practice of surgery. Those names, as I remember them now, were those of Dr. Walter E. Lee and a Dr. Moore down in Texas, and then some Senator's name.

*Q.*—Do you recall who the Senator was? *A.*—Senator Lee, but I don't remember his first name.

*Q.*—Was it Josh Lee? *A.*—Well, that may be.

*By Mr. Leahy:*

*Q.*—I think you stated, Doctor, that both Defendants' Exhibit 44 for identification and Defendants' Exhibit 54 for identification were before you on the consideration of Dr. Selders' application. *A.*—They were read at the committee meeting.

*Q.*—Have you an independent recollection, now, Doctor, as to how many of the sponsors whom Dr. Selders named replied? *A.*—We only received one reply. That is, Dr. Sanderson only received one reply, and only gave that one reply to the committee in its January meeting.

*Mr. Leahy:*—Defendants' Exhibit 44 is the letter of Dr. Walter Estell Lee, 1833 Pine Street, Philadelphia, Dec. 16, 1937. It is addressed to Dr. Frederick Sanderson:

DEFENDANTS' EXHIBIT 44

"In reply to your inquiry about Dr. Raymond E. Selders, he is a mature man and has had a very varied experience. He is an accomplished musician, a graduate in civil engineering and several other professions, and he studied medicine quite late in life. While in the southwest he practiced medicine and surgery and then finally entered the Graduate School of the University of Pennsylvania two years ago, spending one year in the basic science course in Philadelphia, and one year in clinical work at Worcester, Massachusetts. At Worcester they apparently gave him unusual opportunities, far beyond what we considered his training warranted. However, he seemed to get away with it, and the last I heard of him was the fact that he had made application for this position of surgeon to the Home Owners Loan Medical Service.

"I do not know just what he is aspiring to in Washington and I hope this outline that I have given will answer your purpose.

"Very truly yours,
"Walter Estell Lee."

This is a carbon copy of a letter:

DEFENDANTS' EXHIBIT 54

Jan. 12, 1938.

"Dr. John D. Moore,
Hugo, Oklahoma.
"Dear Dr. Moore·

"On Dec. 6, 1937 last I wrote you requesting some information concerning the surgical training and ability of Dr. Raymond Selders, Houston, Texas, who has applied for hospital privileges in several Washington hospitals. As yet I have had no reply from you and would appreciate it very much if you would kindly forward me the information I ask.

"Very truly yours,
"Fred R. Sanderson, M.D."

*By Mr. Leahy:*

*Mr. Leahy:*—This I think has been offered, your Honor, in evidence. I just wish to read the last paragraph: addressed to "Dear John," on the Washington Academy of Surgery stationery:

"I am anxious to talk to you before you reach any decision on Dr. Selders, especially if there is feeling that he will be disproved purely because of his connection here in Washington. As a matter of policy and tact, and I believe for the good of general public attitude toward the profession, the question of his relationship to the Group Health Association, Inc., should not be permitted to enter the discussion."

That is dated Dec. 9, 1937.

*By Mr. Leahy:*

*Q.*—Doctor, I want to ask you now: In the discussion of the qualifications of Dr. Selders for hospital privileges in the hospitals for which he had made application and on which you were acting as one of the committee of credentials, did you or did you not pass on the qualifications of Dr. Selders regardless of any connection which he may have had with the Group Health Association, Inc., as indicated in the letter of Dr. Fishback? *A.*—The Credentials Committee of the Academy of Surgery depended entirely on the qualifications of the man to do general surgery in making its final judgment. It is true that the letter that has been read was read at that committee meeting.

*Q.*—And did the Credentials Committee of the Academy of Surgery approve or disapprove the qualifications of Selders for the privileges which he asked with relation to Group Health Association in any degree, Doctor? *A.*—The Group Health Association situation was purposely kept out of this whole question, as indicated by that letter. That letter was sent really as a precautionary measure—at least, in my opinion—by Dr. Fishback, who was the secretary of our organization. However, so far as I personally was concerned, I was willing to divorce any such thought out of my mind in passing on a man's qualifications to do general surgery.

*Q.*—Doctor, in your judgment what if any recommendation is contained in Dr. Lee's letter as to the qualifications of Dr. Selders to do general surgery in the hospitals of the City of Washington? *A.*—Well, of course, we doctors in this committee meeting talked very plainly, and we sense our responsibility rather keenly, and we feel, to put it in common language, that a letter submitted to us as the only written evidence that we had to go on other than that submitted by Dr. Selders himself really damned him with faint praise. That is my interpretation of that letter.

*Q.*—Did you at that time, then, recommend for or against giving privileges to Dr. Selders in the hospitals for which you investigated? *A.*—The committee's action was unanimous against giving him general surgical privileges.

*Q.*—And do you know how many were actually present of the Credentials Committee at that time and voting? *A.*—No. I have to depend entirely upon my memory, but I think we had a full committee meeting, but I am not absolutely sure. I know I was there.

CROSS EXAMINATION

*By Mr. Lewin:*

*Q.*—Dr. Borden, you were, I believe, a member of the Executive Committee of the District Medical Society during the year 1937, were you not, and the early part of 1938? *A.*—I was appointed first in 1936, and remained through 1938.

*Q.*—And weren't you a pretty regular attendant at the meetings of the Executive Committee during the latter half of 1937? *A.*—I attended a great many meetings.

*Q.*—Yes. As a matter of fact, the minutes, I believe this is fair to say, list you as attending most of the meetings of the Executive Committee during the latter half of 1937. Would you say that corresponded— *A.*—I think that's a fair statement.

*Q.*—Yes. And of course you were familiar, weren't you, with the resolutions that were passed, to the effect that Group Health Association was unethical? *A.*—Well, I was familiar with most of the actions of the Executive Committee, although it was not impressed on my mind then to the extent it is now.

*Q.*—Yes. But I mean, you do remember those resolutions? One was, "We shall consider it unethical," and then in September of 1937 I believe the resolution was that it was unethical. You remember that, don't you? *A.*—Well, now, I want to be perfectly frank about this situation.

*Q.*—I can get you the minutes. *A.*—I am just not clear in my mind what you have reference to.

*Q.*—All right. Let me get the minutes; it will take me a little time, I am afraid. *A.*—If you could repeat the resolution I might remember it.

*Q.*—Well, the resolutions are fairly long, as I remember them, but there were a number of resolutions to the effect that Group Health Association was unethical. Don't you remember that? *A.*—Now, is that in the Executive Board or the Medical Society?

*Q.*—The Executive Committee first, and then reported to the Society.

*Mr. Leahy:*—I think we ought to have the minutes.

*Mr. Lewin:*—Very well. We will have to get them.

*By Mr. Lewin:*

*Q.*—For instance here, at the September 8th meeting, the special meeting of the Executive Committee (indicating). *A.*—Was I present then?

*Q.*—No, I guess you weren't. You weren't present at that meeting? *A.*—Apparently not. I don't see my name there.

*Q.*—Well, let's get the next one. *A.*—I was present at that one (indicating).

*By Mr. Lewin:*

*Q.*—Well, now, take September 27. Do you remember this committee's finding? *A.*—Was I there?

*Q.*—Yes, you were here. At least, you are listed as being present. *A.*—Yes. O. K.

*Q.*—Do you remember the committee's finding that "the conditions of rendering the medical and surgical services offered by Group Health Association as set forth appear to be inconsistent with the criteria for the acceptable form of contract practice by which we are obliged to be guided, and particularly it would appear that at least two of the criteria would necessarily be violated," and then the principles of medical ethics of the American Medical Association are set forth? *A.*—May I just look to see what this is all about?

*Q.*—Yes, indeed. *A.*—Oh, this is report by Dr. Macatee.

*Q.*—Yes. *A.*—I recall this report in general.

*Q.*—Well, to try to shorten it a little bit, don't you remember that the Medical Society took the position that Group Health Association was unethical as violating the principles of medical ethics of the A. M. A.? *A.*—I think both the Medical Society and I took that at that time.

*Q.*—You did. That is all. *A.*—To the best of my memory.

*Q.*—Yes. That is all I wanted. Well, now, Dr. Lyons, who was on this committee with you in the Washington Academy of Surgery, was likewise a member of the District Medical Society and the Executive Committee, wasn't he? *A.*—Dr. Lyons was the chairman of the Credentials Committee of the Academy of Surgery.

*Q.*—Yes. *A.*—Now, whether he was on the Executive Committee or not, I don't know.

*Q.*—Wasn't he a member of the District Medical Society? *A.*—He was a member of the District Medical Society.

*Q.*—Yes. And Dr. Sanderson was a member? *A.*—Yes.

*Q.*—Wasn't he a member of the C. O. & I. M. Committee that was chairmaned by defendant Hooe? *A.*—Why, I have no idea whether he was or he wasn't. He may have been.

*Q.*—Whether he was or he wasn't. He may have been. Wasn't Dr. Putzki also a member of the District Medical Society? *A.*—Dr. Putzki is a member of the Society.

*Q.*—And Dr. Riddick as well? *A.*—Yes, sir.

*Q.*—Yes. Well, now, do you remember that after this letter from Dr. Fishback came to Dr. John Lyons that you gentlemen passed a resolution in the Washington Academy of Surgery? *A.*—What resolution?

*Q.*—I call your attention to the minutes of the meeting of Dec. 10, 1937, of the Council of the Washington Academy, which are already in evidence, signed by Fishback.

THE COURT:—Point out the resolution, please.

*Mr. Lewin:*—Yes.

*By Mr. Lewin:*

*Q.*—Do you remember this resolution, Doctor: "Discussion concerning Group Health Association ensued. It was suggested that the professional qualifications of the surgeon of that organization alone be considered as a matter of public policy. However, a motion of Dr. Sager's was passed requesting the hospital privilege committee to consider the ethics of any applicant as well as his strictly surgical training and experience. The ethics were understood to be as defined by the American Medical Association"? Do you recall being present? *A.*—Yes, I remember that, all about that.

*Q.*—Yes. Well, didn't you gentlemen follow that resolution when you came to consider Dr. Selders? *A.*—Well, now, that requires a little explanation.

*Q.*—Well, all right. You are entitled to give that, but I wonder if you wouldn't answer my question first? Did you consider it? Did you follow that resolution? *A.*—We did not.

*Q.*—You did not follow it? *A.*—We did not. May I? It is very easy to explain how that got into the minutes, if I may.

*Mr. Richardson:*—Go ahead and explain.

*The Witness:*—Well, now, this particular resolution that has been brought to my attention just this very second here came about this way: At the scientific meetings of the Academy of Surgery, which are held four times a year, after a scientific meeting we have a business session, and at this business session we take up various matters that are of interest in a business way. Now, it is my recollection that Dr. Fishback brought up the question of G. H. A. at that time, at that meeting; and then Dr. Sager, in accordance with the statement in those minutes, passed or offered a resolution that the Credentials Committee of the Academy of Surgery in passing on the qualifications of surgeons should consider their ethical standing in any organization as well as their professional ability to do general surgery.

Now, that occurred in the early part of December. The meeting of our committee in which we passed on this Dr. Selders occurred in January; but, in accordance with my former statement, we divorced everything in passing judgment on this man, and at the same time passed the same judgment on five other men not associated with G. H. A., adversely.

*Q.*—Yes, sir. Well, now, it is perfectly clear, isn't it, that Dr. Sager's resolution was passed in connection with a discussion of the Group Health Association? *A.*—Yes, I see that in the notes there.

*Q.*—Yes. *A.*—Yes.

*Q.*—And the result of the discussion was that a resolution was passed directing you to consider, in connection with the Group Health Association applicant, his ethics as defined by the American Medical Association; am I right? *A.*—Well, we have always had the ethics of the American Medical Association as our background and by-laws, always.

*Q.*—Yes, but I am asking you whether you didn't consider that you were directed to consider the American Medical Association's ethics with regard to contract practice in passing on Dr. Selders. *A.*—Well, now, let's get this absolutely straight. We as a group, the Credentials Committee, have always felt that obviously we must abide by the standards set down by the American Medical Association; but we had to go a step further in passing on men doing general surgery, and that was to ascertain whether they were safe to operate on the public.

*Q.*—Dr. Borden, is it your testimony that you didn't follow the requirements of this resolution? You personally? *A.*—If my conscience told me not to follow it, I probably didn't, but my recollection is now, and definitely and honestly, that I passed personally—and I am sure the committee did—entirely on this man's qualifications as a surgeon. Now, there was a reason for that beyond the fact, in my opinion, that it was the right and proper thing to do, and that is for my own protection.

*Q.*—Well now, if there was a resolution here requiring you gentlemen to do it, how do you know that Dr. Lyons and Dr. Sanderson and Dr. Riddick and Dr. Putzki didn't have that situation in mind when they came to pass on Dr. Selders? *A.*—Well, it is perfectly obvious that I can't speak for anyone but myself, but I can say this: that I am in accord, after discussing this matter for a long period of time and coming to a studied decision, in the whole situation.

*Q.*—Now, I think it has been brought out in the evidence that you were considering Dr. Selders' application to Garfield and to George Washington and to Georgetown; am I right? *A.*—Well, not entirely, as my memory goes. My memory is this: that was the last meeting that I attended, because then I became president and automatically left the Board or the Committee of Credentials, but my memory is that we had but one application blank, in which appeared three names that I gave, and that's the only one that I know of, and I didn't see it. It was read off at the meeting.

*Q.*—Yes. And which hospital was that? *A.*—I can't remember which hospital it applied to, but it is my feeling that it was Garfield, but I'm not sure.

*Q.*—Yes. Well, now, if it were Garfield, then you would have had these references before you: Senator Josh Lee, United States Senator from Oklahoma; Dr. Walter E. Lee, surgeon of Philadelphia; and Dr. John T. Moore, the past president of the Medical Association of Texas, at Houston, Texas, wouldn't you? *A.*—Well, I think those are the three names I gave.

*Q.*—Now, did you have any other letters before your committee at that time when you acted than the ones that have been introduced in evidence just now? *A.*—It has been our custom, and I have been on this committee ever since it has been developed, to simply take the evidence that was submitted by the applicant and the only evidence that was submitted were these three names.

*Q.*—Now, did you have anything before you except the letter from Dr. Walter E. Lee, before you, and Dr. Sanderson's letter to Dr. Moore? *A.*—We had just that one letter and Dr. Sanderson's second letter to Dr. Moore.

*Q.*—And they are the only things you had before you? *A.*—No; we had the application blank before us.

*Q.*—And the application blank. Was there anything else that you had before you? *A.*—That's about all the written material that we had.

*Q.*—Yes. Now, you didn't have Dr. Selders before you, I don't suppose? *A.*—No, sir.

*Q.*—And you didn't go to Worcester City Hospital or to Houston or to any places like that to investigate it, did you? *A.*—No, sir. This is a committee composed of five surgeons who are fairly busy men. We get no compensation, and we don't go out beyond our immediate meeting. We expect the material to be supplied to us, and then we will investigate it, but we have never, as a matter of custom, ever, gone outside of our own committee.

*Q.*—I see. Then, you haven't really any greater facilities for passing on an application for surgery than are held by the surgical staff of one of these hospitals, have you? *A.*—Well, only in this way: in my opinion, that the Academy of Surgery represents a group of hospitals. It isn't any one hospital. I think that does away with the possibility of possible bias, or we are trying to make it as standard as we can, as a matter of fairness and protection to the public and to ourselves. Now, we doctors circulate in every operating room in this city, and for that reason we rather feel that we honestly have an opportunity to know as much as possible; but here we were dealing with a stranger, a man who was not a Washington man at all, so our problem was much more difficult.

*Q.*—Well, it would have been just as simple for the surgical staff of a hospital to have considered this letter from Dr. Walter E. Lee as for you five gentlemen to have done it?

THE COURT:—That is obvious, isn't it?

*Mr. Leahy:*—That goes without saying.

THE COURT:—That goes without saying.

*By Mr. Lewin:*

*Q.*—Now, did Dr. Sanderson, as far as you know, write to Senator Lee? *A.*—He didn't present any letter from Senator Lee.

*Q.*—As far as you know he wrote only to Dr. Walter E. Lee and to Dr. Moore? *A.*—That was the only written evidence he brought into the committee meeting.

*Q.*—And you didn't get any response from Dr. Moore? *A.*—After two attempts, no.

*Q.*—Yes. Well, now, isn't it true that Dr. Moore was listed as Dr. John T. Moore; whereas Dr. Sanderson wrote to Dr. John D. Moore? Isn't it also true that Dr. John T. Moore's address on the application was given as Houston, Texas, and Dr. Sanderson wrote to him at Hugo, Oklahoma? *A.*—Well, Dr. Sanderson carried out all of that correspondence. I had nothing to do with it.

*Q.*—Well, now, let me see that letter that you read in evidence a moment ago, will you? The one to Dr. Moore. Let me show you Dr. Lyons' letter to the secretary. Doesn't that show that he wrote to Dr. John D. Moore at Hugo, Oklahoma? *A.*—Well, that is what that letter says.

*Q.*—Well, now, if he wrote to Dr. John D. Moore at Hugo, Oklahoma, and doesn't it also appear on Defendants' Exhibit 54, which was just read to the jury, "Dr. John D. Moore," of Hugo, Oklahoma? *A.*—Yes, sir.

*Q.*—Well, now, if that is where the letter went, don't you think that might account for the fact that you didn't get an answer from Dr. Moore? *A.*—I think that might.

*Q.*—All right. Now, here is Dr. Selders' application to Georgetown University Hospital, and I believe your committee passed on that application, didn't it? *A.*—Well, the only one that I personally have any recollection of was the one that gave those three names. Now, they may have all been similar, so far as I know.

*Q.*—Well; yes. I wonder if this does not refresh your recollection that here Dr. John T. Moore, past president of the Texas State Medical Association, Houston, Texas, is given; the same Dr. Walter E. Lee of Philadelphia; Dr. MacIver, the superintendent of the Worcester City Hospital; Dr. C. J. Burn, the senior surgeon at Worcester City Hospital? *A.*—I never heard of those last two doctors.

*Q.*—And you don't remember that Dr. Sanderson could give any report on what they said about Dr. Selders? *A.*—I am sure that Dr. Sanderson, as far as my memory goes, and it's pretty good—I think that those are the only written documents at that time that we had before us.

*Mr. Lewin:*—Now, gentlemen, have you found the one of Dr. Moore of Hugo?

*Mr. Burke:*—The one that has Senator Josh Lee's name on.

*Mr. Lewin:*—Let us give it to the jury. There is a "Josh." That is the Garfield.

RE-DIRECT EXAMINATION

*By Mr. Leahy:*

*Q.*—Doctor, you stated just now that at the same time that you passed on Dr. Selders' qualifications you passed on those of five other men? *A.*—Well, as a matter of fact, we passed on the qualifications of at least 60 or 70, but we refused privileges or recommended the refusal of privileges of five besides Dr. Selders, making a total of six altogether at that particular meeting.

*Q.*—And were some of those members of the District Medical Society? *A.*—I think that at least four were members of the District Medical Society.

*Q.*—And I think you also were inquired about as to your presence as a member on the Executive Committee of the District Medical Society, and some of the other members on the Credentials Committee also as members of the District Medical Society. *A.*—Yes, sir.

*Q.*—Doctor, when you were acting as a member of the Committee of Credentials of the Academy of Surgery here in Washington, what effect, if any, did the membership of anyone of the Credentials Committee on your Academy have with the District Medical Society? *A.*—Well, I am convinced and I know that none of the members of that committee even thought of the Association. I know I didn't, and it is absolutely impossible to bear in mind what committees you're members of up at that District Medical Society. There are 40 committees, and there are nearly 200 appointments on those committees, and I wouldn't have the faintest idea what committee any other member was on, unless I had had some association to remember it by.

RE-DIRECT EXAMINATION

*By Mr. Leahy:*

*Q.*—Doctor, from anything that was stated at the meeting which passed on the qualifications of these six men you say you passed on that night, was there any indication whatsoever that there was anything but an honest determination of the qualifications of those men for the recommendations you made?

*Mr. Lewin:*—Objected to as leading and asking for a conclusion.

THE COURT:—Yes, the doctor has gone over that.

*By Mr. Lewin:*

*Q.*—With regard to your remembering your committee appointments you do remember, don't you, that you and Dr. McGovern and Dr. Hooe formed the committee which drew up the so-called white list which was issued July 29, 1937?

*Mr. Richardson:*—Objected to as not proper cross-examination.

THE COURT:—Sustained.

## TESTIMONY OF HENRY B. BLAIR

DIRECT EXAMINATION

Henry B. Blair, Washington, a member of the Bar of this Court since July, 1892, also of the Court of Appeals, and the Supreme Court of the United States, is connected with the Episcopal Eye, Ear, Nose and Throat, and Columbia hospitals. He was one of the incorporators; it was incorporated in 1897, and he has been continuously connected with the institution since then. During 1937 and 1938, he was the first vice president, which is the active member of the hospital from the executive side; the bishop of the diocese being, ex officio, the president, and he was also chairman of the executive committee. In Columbia Hospital he was on the executive committee perhaps during the entire period.

*Q.*—In the Episcopal Hospital what is the governing body of that hospital? *A.*—The governing body is the board of governors, which meets three times a year. The active body is the executive committee, which is appointed from the board of governors and meets monthly except during July and August.

*Q.*—And in Columbia what is the active governing body? *A.*—The setup is somewhat the same, I think. They are called "directors" at Columbia. They meet four times a year and the executive committee meets monthly.

*Q.*—And in between the meetings of the board I presume the executive committee is the controlling or governing body? *A.*—I would think so.

*Q.*—Is the Episcopal Eye, Ear, Nose and Throat a general or special hospital? *A.*—A special hospital, as its name implies.

*Q.*—Is Columbia a general or special hospital? *A.*—A special hospital for lying-in and diseases of women.

*Q.*—Does the Episcopal have an attending staff and a courtesy staff? *A.*—Yes.

*Q.*—What has been the rule, if any, in the Episcopal Hospital with reference to the right to practice one's profession therein? *A.*—The medical staff makes recommendations annually and the board of governors approves those recommendations unless there is some question raised in regard to them.

*Q.*—In other words, is it a requisite at the Episcopal Hospital that one must belong either to the attending or courtesy staff before he can practice his profession there? *A.*—Yes.

*Q.*—And can you tell us over what period of time such a rule has existed? *A.*—During the existence of the hospital, so far as I know.

*Q.*—Is there any rule in the Episcopal Hospital restricting membership on the courtesy staff or attending staff to membership in the local medical society? *A.*—Not in the hospital itself; there is in the by-laws of the Medical staff.

*Q.*—During the years 1937 and 1938 was there any by-law in force in the Episcopal Hospital which required membership in the local District Medical Society as a prerequisite to practicing there? *A.*—I don't so understand it.

*Q.*—Did you know Dr. Dabney? *A.*—Quite well, pleasantly, not intimately; pleasantly, though.

*Q.*—Do you know whether he was a member of the courtesy staff in 1937 and 1938? *A.*—He was one of the chief surgeons during that time, which means he was a chief of the staff; we have there; one of the twelve chief of staff surgeons.

*Q.*—And continuously that during those two years, 1937 and 1938? *A.*—Yes.

*Q.*—Doctor, as vice president of the hospital during those two years, do you recall whether there was any regulation or rule of the hospital against G. H. A. patients coming into that hospital? *A.*—Not so far as I have any knowledge.

*Q.*—Did you know of any rule, or was there any rule of that hospital which made it necessary for Dr. Dabney to bring patients through the back door of the hospital; that is, G. H. A. patients? *A.*—I never heard of it; in answering your question, there was no such rule.

*Q.*—Now, with reference to Columbia Hospital, Mr. Blair, the years 1937 and 1938, do you recall whether Columbia Hospital ever put into effect any rule requiring membership in the local medical society as a prerequisite to the enjoyment of hospital privileges? *A.*—I am sure it did not.

*Q.*—Do you recall there was any rule or regulation put into effect by Columbia Hospital against G. H. A.? *A.*—I think not.

*Q.*—Do you know whether now there are on the staff or were during the years 1937 and 1938 members on the Episcopal Hospital staff who were not members of the District Medical Society? *A.*—I can't answer that positively; I think not, but I do not know.

*Q.*—Have you any knowledge as to that in regard to Columbia Hospital? *A.*—I would have to make the same answer there.

CROSS EXAMINATION

*By Mr. Lewin:*

*Q.*—Have you got that by-law you spoke of of the medical staff? *A.*—I furnished all the information I have. I have nothing with me; at the request of the Government we furnished everything we had.

*Q.*—The medical staff has by-laws? *A.*—They have of their own, yes.

*Q.*—Were you the chairman of the executive committee of the Episcopal Hospital in September 1938? *A.*—Yes.

*Q.*—Did you attend a meeting of that committee September 20, 1938? *A.*—I would expect so; I haven't any independent recollection of it at this particular time.

*Q.*—I show you what purports to be the minutes of that meeting, signed by Anita Richardson, secretary pro tem; is that her signature? *A.*—Yes.

*Q.*—I call your attention to this statement:

"The chairman informed the committee that he had received during the summer several communications regarding Group Health Association and that we would go along on the present basis until the matter had been finally adjusted between the doctors and Group Health Association."

Do remember making that statement?

*A.*—Substantially: that is Miss Richardson's language; it is not mine.

*Q.*—By "doctors" in that phrase, "adjusted between the doctors and Group Health Association," did you mean the Medical Society of the District of Columbia? *A.*—Our own doctors; whatever conclusion they might reach.

*Q.*—That is, go along on the present basis until the matter had been adjusted between the doctors on your staff and Group Health Association? *A.*—That is my response.

*Q.*—That is the statement you made? *A.*—Yes.

*Q.*—Well, do I understand your testimony to be that there was a by-law of the medical staff relating to confining the courtesy list to members of the District of Columbia Medical Society? *A.*—I think: now, this is impression, and I am not positive about it. I think our medical staff has had both the clause in effect and the clause not in effect, and my information is that at the time of this, 1937 and 1938, as to which inquiry was made, that was not a requirement; that is my information. *Q.*—I wonder if you could furnish us with that by-law. *A.*—I can't furnish you with anything. I have furnished you with everything we had as called for by the subpoena.

*Q.*—What does the by-law look like? *A.*—It is very much the same as what you have there. It is not in the reports of the hospital.

*Q.*—You don't know when that by-law was adopted? *A.*—Which one do you mean?

*Q.*—The by-law restricting the courtesy staff to members of the District Medical Society. *A.*—No, I do not; not during 1937 and 1938, I don't think; it was after that time. I have been told that there was no such by-law at that time, and I have produced the sources of my information and filed them with you in response to a subpoena.

*Q.*—Was Dr. Jenkins, W. H. Jenkins, a member of your staff? *A.*—I wouldn't question it; I know he is now, and I think he has been for many years.

*By Mr. Leahy:*

*Q.*—Do you know any other place we could go to find that by-laws? You say you have turned over to the Government all the information you had, in response to the subpoena? *A.*—It is my understanding—I am perfectly willing to look further, but I gave them what I had and what I was told was a copy of the by-laws in force at that time, which was what the subpoena called for. If I find anything I shall be glad to furnish it.

*Mr. Lewin:*—I don't believe our subpoena did call for that in this trial. If you will look for it I will be thankful.

### MARCH 28—MORNING

### TESTIMONY OF CHARLES D. DRAYTON

#### DIRECT EXAMINATION

Charles D. Drayton, a member of the bar of this Court for about thirty-five years, also a member of the bar of Court of Appeals and of the Supreme Court of the United States, is also a member of the Board of Education, a director of the Children's Hospital for about ten years, and president of the board of that hospital for about five or six years.

*Q.*—What are the functions of the board of directors of that hospital? *A.*—They hold monthly meetings and examine questions of general policy.

*Q.*—Are they the final administrative board of the hospital? *A.*—They are.

*Q.*—How many are on the board, Mr. Drayton? *A.*—Six.

*Q.*—Will you tell us about the Children's Hospital; not in detail: just what is the Children's Hospital? *A.*—The Children's Hospital was incorporated under an Act of Congress seventy years ago for the purpose of caring for indigent children under the age of 12 years. It now does 85 per cent charity or part-charity work. It was originally incorporated entirely as a charitable institution, but subsequently they have moved from one place to another and they now have twenty-seven private rooms, from which we derive some revenue; and, of course, our support is largely dependent on our appeal to the public. That is, if we do a good job the public supports us for these charity patients.

*Q.*—Do you receive any assistance from the community chest? *A.*—The community chest now buys services from the private hospitals, including Children's, through the Health Security Administration, and they pay for it at less than our cost, and they don't always pay for all the service they contract for with us.

*Q.*—Do you have staffs in that hospital? *A.*—We have a medical staff composed of some of the leading doctors in Washington, the chief of whom is Dr. Joseph F. Wall, a leading pediatrician, or child specialist. We also have had from the first of February 1937, a so-called courtesy staff or list. That staff assumes no obligation to attend the little patients in the hospital whose parents cannot pay for them. They bring their own patients to the private rooms.

*Q.*—Are there any prerequisites which the hospital has fixed for applicants to the courtesy staff? *A.*—Well, for a great many years—I don't know exactly when it started—we have had a prerequisite for admission to the general staff of the hospital and it is and has always been that they shall be members of the local Medical Society or ethical society, as it is referred to; and that same rule when the courtesy staff came into being, in February 1937, naturally applied to the courtesy staff.

*Q.*—Do you recall approximately how many are on the courtesy staff of Children's? *A.*—I think about eighty-seven, now. I have a memorandum of that, if I may use it.

*Q.*—Could you refresh your recollection from it? *A.*—No, I am wrong. The courtesy staff is one hundred and thirty-nine, and the medical staff one hundred and fifty-four; that is, consulting, and all the house doctors, interns and so on. *Q.*—Mr. Drayton, did you occupy the chair as president of the board of directors during the years 1937 and 1938? *A.*—Yes.

*Q.*—During those years 1937 and 1938, was this requirement with reference to membership in the local Medical Society a prerequisite to your recollection, or not, for applicants to practice on the courtesy staff? *A.*—It was always a prerequisite, yes, in actual effect, but it was not written; that rule was not written, I think, until October, 1937, but it had always been effective.

*Q.*—Do you recall whether at any time there came under your notice an application for privileges of Children's Hospital of one Dr. Raymond E. Selders? *A.*—Yes, I think that matter was brought up by the medical staff at a board meeting.

*Q.*—Do you recall whether there was any correspondence about it? *A.*—Yes, there was correspondence, I think, in November of 1937, between Miss Gibson, at the direction of the board—Miss Gibson being the superintendent of the Children's Hospital, and Mr. Penniman, who was president of the Group Health Association.

*Q.*—Have you the file handy here of Children's Hospital? *A.*—I have some copies that are available, if there is no objection to the copies.

*Q.*—Mr. Drayton, I will ask you to look at the copies of this series of correspondence in evidence here. We will save time. Now, looking at that correspondence, can you refresh your recollection as to when it was that Miss Gibson, as the superintendent of the hospital, first communicated any information with reference to the application of Dr. Raymond E. Selders, to Mr. Penniman? *A.*—That appears to have been on Nov. 15, 1937 in a letter addressed by Miss Gibson to Mr. Penniman. Would you like me to read it?

*Q.*—Yes, read the letter.

*The Witness:*

"Dear Mr. Penniman:

"At a meeting of the board of directors of the Children's Hospital, held November 15, I was authorized to reply to your letter of November 8 as follows:

"The Children's Hospital will accept for treatment or hospitalization any patient in need of care, under its charter, rules and regulations.

"This pertains to indigent, semi-indigent, and a very limited number of pay patients—as we have only twenty-seven beds available for pay patients.

"All doctors treating these patients while in the hospital must have staff appointments and be members of local medical societies.

"Dr. Raymond E. Selders has made no application so far for staff appointment.

"Yours sincerely,
"Mattie M. Gibson,
"Superintendent."

*Q.*—Do you recall now whether you were present at the meeting of the board of directors at which this matter came up concerning which the superintendent wrote on Nov. 15, 1937? *A.*—I think I was there.

*Q.*—Doctor, did anything such as is contained and stated in that letter bear any relation at all to G. H. A.?

*Mr. Lewin:*—Which letter?

*Mr. Leahy:*—That letter of Nov. 15, 1937.

*A.*—No, no reference was made to G. H. A. It was addressed to G. H. A., of course.

*Q.*—Was there any discussion in the board of directors at the time, or out of which meeting came this letter, which we have just read, indicative at all of opposition to G. H. A. as the foundation of this letter? *A.*—No.

*Q.*—Did you personally have any correspondence with reference to Dr. Selders' application? *A.*—I think I did later in 1938.

*Q.*—Do you recall about what time in 1938 you had that correspondence? *A.*—I believe that was in November too. It began in the summer when I was up in Maine and there was some delay in responding to the letters from Group Health Association by reason of that, and also by reason of the fact that our board doesn't meet in August and September, so that my replies were somewhat delayed.

*Q.*—You have copies of your replies with you? *A.*—No, they have stripped our files at Children's so that I couldn't find those letters, and no return has been made of them, so that I haven't been able to see what they contained.

*Q.*—I will show you some letters which have been introduced in evidence, Mr. Drayton. First, I will show you what has hitherto been introduced for the prosecution as Government's exhibit 378—it is Mr. Kirkpatrick to Charles Drayton, dated Aug. 6, 1938.

Another, No. 379, dated Sept. 16, 1938, your letter, which has been identified and offered in evidence as Government exhibit 380; and also Government exhibit 381.

Could you, Mr. Drayton, just quickly glance over, beginning with 378, and see if you can refresh your recollection to advise us whether you personally conducted that correspondence, and what it is about?

*A.*—Well, this is one of Aug. 6, 1938, from Mr. Kirkpatrick to me, thanking me for a letter I wrote him on August 4, in which he says something about taking up with the board of trustees at its next meeting the question of Dr. Selders' admission to the courtesy staff.

The next letter, of September 16, that was simply a tracer from Mr. Kirkpatrick.

Then I told him on September 19, I had overlooked the fact that we had no September meeting of the board, but that just as soon as the matter could be given consideration I would further advise him; and then the last one here seems to be my letter to him of November 2, in which I stated that in view of the proceedings now under way involving Group Health Association it didn't seem possible for us to give any final answer on any aspect of the controversy. Further, that he had theretofore been furnished with a copy of the memorandum of April 1, 1938 embodying the rule promulgated by our medical staff and adopted by our board governing admission to the hospital where an emergency exists, and also the attendance on such children of members of your staff; and I enclosed another copy of that memorandum.

*Q.*—Do you recall whether the memorandum of April 1, to which you referred, permitted physicians to treat children in Children's Hospital in emergency cases? *A.*—It did, and that always has been our rule.

*Q.*—Do you recall whether there was any further correspondence after Nov. 2, 1938, Mr. Drayton? *A.*—I don't think there was any more, but I am not certain about that; my memory isn't so good.

*Q.*—At least you haven't been able to locate any copies of other correspondence? *A.*—My attention has not been called to any later letter.

*Q.*—Was it your practice to attend regularly the meetings of the board? *A.*—Yes.

*Q.*—Do you recall whether at any time there was any action taken by the board with reference to any of this correspondence, which was directed to G. H. A., to restrain it in any way? *A.*—No, we didn't care anything about G. H. A. We were trying to do the best we could for the hospital.

CROSS EXAMINATION

*By Mr. Lewin:*

*Q.*—Mr. Drayton, you just read from a copy of a letter dated Nov. 15, 1937. Now, as a matter of fact, that letter was never sent, was it? *A.*—So far as I know it was; I have no other information.

*Q.*—There is in evidence this letter, Government's Exhibit 359, dated Nov. 16, 1937, from the superintendent, Miss Gibson, to Mr. Penniman, and the testimony here is that this is the letter which was received. *A.*—Well, I don't know; that may be so.

*Q.*—It differs from the letter you read in this: the letter you read contained this statement:

"All doctors treating these patients while in the hospital must have staff appointments and be members of local medical societies."

whereas that statement is omitted in the letter Miss Gibson sent Mr. Penniman. Now, isn't it true that was omitted at your direction? *A.*—Not at all; I had no knowledge of it until this moment, that it had been omitted.

*Q.*—But it seems perfectly clear that another letter was substituted for the one of November 15? *A.*—It so appears.

*Q.*—Do you know why? *A.*—Not at all.

*Q.*—You attended, did you not, the meeting of the members and incorporators of Children's Hospital held on Dec. 6, 1937? *A.*—I guess so.

*Q.*—That was just about three weeks after the letter I showed you was sent by Miss Gibson, was it not? *A.*—Yes.

*Q.*—Don't you find there that on December 6, this occurred:

"Only physicians, surgeons, and dentists who are licentiates of the District of Columbia and also members of the District Medical Society or ethical body in their locality shall be eligible for appointment to the medical staff.

"Physicians, surgeons, and dentists not officially connected with the hospital, but members of their ethical medical societies, may be accorded the privilege of using the facilities of the hospital as a matter of courtesy for a term that shall continue during the pleasure of the board of directors, those accepting such privileges to be known as the courtesy staff;"

and some more which I don't believe is particularly pertinent. *A.*—That seems to be what this shows.

*Q.*—So, some three weeks after this letter was written, you amended your by-laws for the first time requiring membership in the District Medical Society as a condition to the appointment to your courtesy staff? *A.*—That appears to be so, but that has been the practice for many years.

*Q.*—You had only had a courtesy staff for less than a year, had you not? *A.*—I correctly stated that in my direct, but said that it applied to the medical staff for many years and, thereafter, applied to the courtesy staff when it was formed in 1937.

*Q.*—You say it applied to the medical staff for many years, but you say it was the custom to apply it to the courtesy staff from February 1937 on? *A.*—Yes.

*Q.*—But you had no such regulation during all those years. *A.*—The courtesy staff was not in existence until early in 1937.

*Q.*—You had no such regulation until Dec. 6, 1937. *A.*—Not any written regulation.

*Q.*—Is it not true that the reason you made this change on Dec. 6, 1937 was that you had just received, five days previously, a letter from Dr. Conklin of the District Medical Society, enclosing a resolution of December 1, of that Medical Society, stating that as a matter of educational policy the hospitals should adopt a rule confining their entire staffs to members of the District Medical Society, or other local societies of the A. M. A.? *A.*—That had been the custom so long that we were simply following it in putting it in writing.

*Q.*—Didn't you put it in writing on Dec. 6, 1937 as a result of the receipt of this communication from the Medical Society of the District of Columbia? *A.*—I say "No," not as a result of it. It may have called our attention to the fact that the practice that we had been carrying out for many years had not been in writing, and resulted in that being done.

*Q.*—Will you look at this list of members of the outpatient department of Children's which was obtained, I believe, from your hospital, and tell me—this is September 1938—whether all those doctors are members of the District Medical Society? *A.*—I couldn't tell you; I don't know.

*Q.*—Now, as a matter of fact, do you know whether Dr. Sigmund Newman, of Virginia, was a member of the District Medical Society or not? *A.*—He may be a member of the Virginia society, which would be recognized as of the same ethical standard.

*Q.*—Do you know whether he is a member of that society? *A.*—No.

*Q.*—Do you know whether Dr. Stephen Verges is? *A.*—I don't know. There is no use going through all those and asking me about them, because I don't know.

*Q.*—As far as you know, there may be a number of them who are not? *A.*—As far as I know there may be anything about it that I don't know.

*Q.*—Did the minutes of your meeting of the medical staff of Children's Hospital for April 4 come to your attention? *A.*—Let me have a look at it. No, I will say this generally. We don't see the minutes of the medical staff.

*Q.*—This didn't come to your attention? *A.*—No.

*Q.*—And you weren't aware of this action that I am pointing out to you there? *A.*—No, I have no knowledge of this, but I did write the letter to Senator Capper.

*Q.*—Now, when was Group Health Association or Dr. Selders notified that his application had been rejected at the Children's Hospital? *A.*—I don't know, Mr. Lewin.

*Q.*—As a matter of fact, do you know whether he was ever notified? *A.*—I don't know whether he was definitely notified or not.

*Q.*—Apparently we have no letter of such notification. I wondered if you ever saw one. *A.*—No, I have never seen one. I don't believe there was any such letter, after mine of Nov. 2, 1938.

*Q.*—I am speaking now of the fall of 1937, or the early part of 1938. *A.*—I doubt he was definitely notified, but I am not familiar with anything to the contrary.

*Q.*—Did you understand that his application was definitely rejected in the fall of 1937 or the early part of 1938? *A.*—Well, I think it was rejected by the committee of the medical staff, which passes on those applications, but I am not certain.

*Q.*—Doesn't the board of directors pass finally on those applications? *A.*—Well, yes, it is submitted by the staff, but as your Dr. Cabot stated we rely and must rely on the medical staff.

*Q.*—Do you remember their making a recommendation to you in the latter part of 1937 or early part of 1938 that Dr. Selders' application should be rejected? *A.*—I really don't; my memory is bad, and there has been a lot of things since that time; it may have been done.

*Q.*—You don't remember receiving a letter from Mr. Kirkpatrick, calling your attention to Judge Bailey's decision with reference to Group Health; that was written July 28, 1938? *A.*—Yes, I guess so; it brings it back to me now.

*Q.*—Isn't it true that was forwarded to you at your summer home in Massachusetts? *A.*—Yes.

*Q.*—And you remember that you replied to Mr. Kirkpatrick August 4. I wonder if this would refresh your recollection as to whether he had been rejected before that time. Don't you say:

"As soon as our board meets in September I shall take up the question as to what position we should now take respecting Group Health Association, Inc. and advise you on behalf of Children's Hospital. Since the matter is one of great importance and since our position heretofore has resulted from formal action taken by our board, you will understand that I am not able now to announce any change."

*A.*—That action by the board may have been of a general nature. I am not sure it was directed to Dr. Selders' application, because the general rule that had always been in effect may have been what I referred to.

*Q.*—Your impression is that the action of the board requiring membership in the local society was taken with respect to G. H. A.? *A.*—I didn't say with respect to G. H. A.; I meant in applying the rule that our staff should be recruited from the Medical Society generally.

*Q.*—When you say, "our position heretofore has resulted from formal action taken by our board," weren't you talking with respect to the action taken by the board in regard to Group Health, which you mentioned in the sentence just before that? *A.*—It may have been that; it may have been the general rule or it may have been some specific objection to Dr. Selders' application.

*Q.*—In any event, what you told Mr. Kirkpatrick was that you would take up the question of your position as regards Group Health in the fall of 1938, and not as regards Dr. Selders. *A.*—That may be and then subsequently I found we didn't have a meeting in September.

*Q.*—And when you said the matter is "one of great importance," weren't you referring to your decision with regard to Group Health? *A.*—Oh, the whole problem of Group Health; that is true.

*Q.*—Then, I believe it is true, isn't it, that you wrote Mr. Kirkpatrick and told him you would take the matter up with the board at its meeting in September, and then, in September, after receiving another letter from Mr. Kirkpatrick, you told him you were under a misapprehension, that the board had not met in September—and then you say your letter of Nov. 2, 1938 is the last communication on the subject; is that right? *A.*—The last I know about.

*Q.*—And that was just about a year after Dr. Selders had applied for privileges? *A.*—Yes, he had correspondence—Mr. Kirkpatrick with Miss Gibson, and she had given him what we regarded as some definite answer.

*Q.*—That is what I was looking for. Can you find any definite answer? *A.*—I mean in advising him that in order to practice in the hospital he would have to be a member of the staff, and then placing back of that the thought that members of the staff must be members of the local medical society. That would seem to have been somewhat of an answer; not as direct and definite, perhaps, as you would like, but an answer.

*Q.*—Did you know at the time that Dr. Selders himself was a member of the Harris County Medical Society, a constituent society or component body of the A. M. A.? *A.*—I don't know whether I heard that since or before.

*Q.*—Did his application show that to you? *A.*—I never saw his application because, as I say, we leave that to the medical staff to pass on.

*Q.*—Would that have brought him under the operation of this rule which you adopted in the early part of December, 1937? *A.*—Oh, you mean the rule concerning membership in the local society or ethical body?

*Q.*—Yes. Would that have brought him under that rule? *A.*—That fact alone, if he had been in good standing and recognized as qualified to do the things that he claimed able to do, and made application to do, I would say yes.

*Q.*—Well, do you know whether he was, or not? *A.*—Whether he was qualified or not?

*Q.*—Yes. *A.*—I know that the medical staff didn't think so and they made inquiries concerning him, and rejected him for that specific reason.

*Q.*—Do you know what inquiries the medical staff made? *A.*—They inquired of the College of Surgeons.

*Q.*—You mean the Washington Academy of Surgery? *A.*—Yes.

*Q.*—Did they refer his application to the Washington Academy? *A.*—They asked it concerning this man's qualifications; his application having been for all sorts of surgery at Children's Hospital.

*Q.*—Did Dr. Selders give you some references? *A.*—Probably so.

*Q.*—Did you write to his references? *A.*—I presume so and I am aware of one letter written to the Worcester Hospital, of which I have been told.

*Q.*—That was written by your medical staff? *A.*—Yes, Dr. Titus wrote the letter and had a reply. He is a member of our staff.

*Q.*—And he wrote it in his capacity as a member of your staff? *A.*—I don't know in what capacity he wrote it, but he wrote a letter and the report was adverse on Dr. Selders.

*Q.*—I wonder if we might have that letter. *A.*—Well, you will have to get it from Dr. Titus. I haven't it. I am trying to answer your questions as best I can. I am not submitting that letter, because I haven't got it.

*Q.*—Are you positive that you saw it in the files of the Children's Hospital in response to a letter from your staff making inquiry on the subject?

*Mr. Leahy:*—He didn't say that.

*The Witness:*—I didn't say I saw it in response to a letter of our staff. I said I had been told such inquiry had been made.

*Q.*—You don't know whether your staff or any member representing it communicated with any of Dr. Selders' references?

*Mr. Richardson:*—He said he did know. He said Dr. Titus did and that Dr. Titus was on their staff.

THE COURT:—He very carefully told you he didn't personally know what went on; that the medical staff took care of those matters, and then you asked him if he heard concerning it, and he answered that question.

*By Mr. Lewin:*

*Q.*—Well, I will see if I can make this clear: Do I understand that in the files of the Children's Hospital you have at any time had a letter from Dr. Selders' references? *A.*—I haven't examined that file; in fact, it was taken over by the Government.

*Q.*—Did you respond to the subpoena? *A.*—Yes.

*Q.*—Did you produce any such letter? *A.*—I wasn't asked for any such letter.

*Q.*—Well, such files were not taken over by the Government. *A.*—There was some indication later that a great many of the letters were taken.

*Q.*—Do you know, as a matter of fact, that the Government has received any such letter as you describe? *A.*—No, I said I hadn't seen any such letter.

RE-DIRECT EXAMINATION

*By Mr. Leahy:*

*Q.*—Now, in writing your letter of November 2 to Mr. Kirkpatrick, which you state is the last letter you now have any recollection about, I want to ask you about what you referred when you stated:

"I have not been more prompt in replying to your several communications dated July 28 and Aug. 6, 1938, asking that Dr. Raymond E. Selders, a member of your staff, be admitted to the courtesy staff of the Children's Hospital, and that he may attend members of your Association admitted as patients there, for the reason that, in view of the several court pro-

ceedings now under way involving Group Health Association, Inc., it did not seem possible for us to give any final answer on any aspect of the controversy."

What were you referring to when you said:

"In view of the several court proceedings now under way involving Group Health Association, Inc."?

*A.*—All of them were not perhaps court proceedings. I was aware, however, that the Corporation Counsel—

*Mr. Kelleher:*—We object to that, not responsive to the question.

*Mr. Leahy:*—I think we have a right to know what he referred to in this letter. The letter is in evidence.

THE COURT:—He may answer.

*The Witness:*—The whole atmosphere was charged with doubt about the legal status of Group Health, as witness the Corporation Counsel's opinion to the effect that it was—

*Mr. Lewin:*—Did you receive the opinion?

*The Witness:*—No, but I was informed what it was.

*Mr. Lewin:*—Well, I object to it then.

THE COURT:—I don't think he may go into details of it.

*Mr. Leahy:*—No, just the fact that there had been an opinion; that he was informed of it, as explaining this letter.

*Mr. Lewin:*—I want to object to him testifying to something which is immaterial and outside the issues of this case.

THE COURT:—He is stating his reasons why he wrote that letter; the reference he was making in it. It doesn't make any difference how he got the information. It is part of the explanation for the letter, so the jury may understand what he meant when he wrote it.

*A.*—Judge Bailey's decision, I think, was in August, 1937. Of course, that was favorable to G. H. A., after they had changed the by-laws, and so on; and then there was a possibility—in fact, it was understood that further action was being taken to determine this question, or might be taken. The whole thing was in doubt, in view of the pendency of these several matters in the court, or in legal channels. Therefore we felt that we were not in position then to do business with a group whose legal status was in doubt.

## TESTIMONY OF SAMUEL H. ROGERS

### DIRECT EXAMINATION

*By Mr. Leahy:*

*Q.*—Just to refresh your recollection and everybody's recollection, you have some connection with Casualty Hospital? *A.*—President of the board of directors.

*Q.*—I want to direct your attention to a meeting which has been testified about before, at which a Mr. Loomis and Kirkpatrick, and you, as representative of the hospital, conferred together sometime in 1938. Do you recall the meeting to which I refer? *A.*—I do.

*Q.*—Do you remember now who was present? *A.*—We had two meetings.

*Q.*—Do you remember a meeting at which Mr. Loomis and Mr. Kirkpatrick were present? *A.*—I do.

*Q.*—And the subject was discussed as to whether they could take over a wing or bay of your hospital? *A.*—That proposition was made, yes.

*Q.*—And do you recall whether at that meeting, Mr. Kirkpatrick discussed the matter with you? I don't mean you alone, but your group, representing the hospital? *A.*—Yes, I do.

*Q.*—Do you remember at that time Casualty Hospital was approaching its fiftieth anniversary? *A.*—I do remember that very distinctly.

*Q.*—Was anything said by Mr. Kirkpatrick as to what he would do for Casualty in the event that Casualty would permit him to take over the wing or bay of the hospital? *A.*—Well, it is just hard to recall which one of the representatives gave the thought. I could hardly say whether it was Mr. Kirkpatrick or Mr. Loomis, but they did point out that it would be an excellent time for us to get some favorable publicity by joining in with Group Health, who had been favored with a great deal of publicity and was being favored with a great deal of publicity at that time.

*Q.*—Did they say anything to you at that time about having one of the best publicity agents in the world?

*Mr. Lewin:*—Objected to.

THE COURT:—It is a leading question.

*Mr. Leahy:*—I think I asked Mr. Kirkpatrick that question and I am just offering this in connection with his answer.

*Mr. Lewin:*—It is an immaterial statement anyway.

THE COURT:—I don't know whether it is immaterial or not. Mr. Kirkpatrick went into this conference.

*Mr. Lewin:*—But he didn't talk about publicity agent.

THE COURT:—He probably talked about certain things in connection with it. If so, the rest of it is admissible. It all had reference to the hospital. Proceed.

*The Witness:*—It was brought to our attention that they had excellent publicity and I couldn't recall the words exactly, but certainly it amounted to the same thing; that they had a very excellent publicity man.

*Q.*—Did they say anything about what power they had in Congress?

*Mr. Lewin:*—Objected to as totally immaterial.

THE COURT:—I think we should let the witness testify. I don't think you should lead him.

*By Mr. Leahy:*

*Q.*—Will you tell us in your own way just what was said there? *A.*—They told us that high officials of the Government were very much interested in this movement and that members of Congress were very much interested in it; they didn't mention who or how many. They let us know they had the backing of Government officials and at least some members of Congress.

*Q.*—Do you recall whether anything was said in the conference with reference to the corporate capacity of the Casualty Hospital to lease a wing? *A.*—That proposition was made; that they might lease a wing. They had previously had representatives go through the hospital and it happened at that time that we were not crowded; different than it is at some times; today, especially; and that proposition was made. Of course I told them that we were organized for a definite purpose and that didn't fit in with the definite purpose.

*Q.*—What was the definite purpose you stated? *A.*—That purpose was and is to maintain an institution for furnishing emergency medical and surgical service and hospitalization to all, regardless of race, color, religion, or ability to pay.

*Q.*—What did they say about that? *A.*—Well, I couldn't hardly recall what they said. They, of course, let us know they were not interested in that part of it. They were definitely interested in taking care of Group Health patients and having Group Health doctors attend them.

*Q.*—Was any arrangements kept after this conference between G. H. A. and Casualty? *A.*—No, at the second conference we told them we didn't see how we could change our setup to suit their requirements.

## TESTIMONY OF HENRY ROLFE BROWN

### DIRECT EXAMINATION

Henry Rolfe Brown, retired in June, 1937. He took his medical course in the University of New York, graduated in 1889, and served an internship at Bellevue Hospital, New York. He engaged in private practice in San Francisco until 1898, then moved to Providence, Rhode Island, until 1916, and then joined the army, as a member of the Medical Corps. He remained in the Medical Corps about two years and was overseas. Following return from service overseas, after having a nice rest he went into the Veterans' Administration, operating and organizing hospitals beginning in 1921.

*Q.*—Do you recall now how many hospitals you supervised the administration of? *A.*—I organized the Veterans Hospital in Rutland, Massachusetts; spent three or four years there, then transferred to Aspinwall, Pennsylvania, just opposite Pittsburgh; stayed there for ten years, and then came into the Veterans Administration in Washington where I was put in charge of all tuberculosis hospitals throughout the United States, and where I remained until I was retired in June, 1937.

*Q.*—How many such tuberculosis hospitals are there under the direction of the Veterans Administration? *A.*—About twenty, at that time.

*Q.*—Now, do you recall at any time, Doctor, that you were approached by Group Health Association for the purpose of having you head the organization as medical director? *A.*—Yes, a Mr. Otterman, of H. O. L. C., Home Owners' Loan, approached our medical director, Dr. Griffith, in the Veterans Administration and asked him if there was any member of his staff who would be interested in such a venture. He got in touch with me and talked the matter over two or three times, and laid out the plans for the organization of Group Health Association; and I believed then, as I do now, that such a thing would be a very valuable thing for the community, especially those in low income groups; and being very much in favor of such a thing, I went into it with the idea of developing and making it a success.

*Q.*—Do you recall when those conversations began? *A.*—March or April 1937.

*Q.*—Do you recall now whether a time arrived when definite arrangements were made with you to become the medical director? *A.*—That was the latter part of April.

*Q.*—Can you recall when you first met him? *A.*—I believe I first met Dr. Neill at a meeting of the Executive Committee of the Group Health at the Medical Society Building on M Street.

*Q.*—Do you remember what date that was, Doctor? *A.*—I don't believe I do, Mr. Leahy. I don't just recall that date.

*Q.*—Do you recall whether you ever met Dr. Neill at Mr. Childers' house? *A.*—Yes, I did.

*Q.*—Do you recall whether that was before this meeting at the Medical Society or following it? *A.*—Following it.

*Q.*—Following it. Who else was there at Mr. Childers' house on that occasion, Doctor? *A.*—Mr. Childers, Mr. Penniman, Mr. Zimmerman, Mr. Russell, and myself.

*Q.*—Do you recall in what capacity Mr. Penniman was acting then? *A.*—He was president of Group Health at that time.

*Q.*—And Mr. Zimmerman? *A.*—Mr. Zimmerman never had any position in Group Health but was the real man behind the operation of it.

*Q.*—And Mr. Russell, did you say? *A.*—He was the legal advisor and chief counsel of H. O. L. C.

*Q.*—And in what capacity were you there that night? *A.*—I was there as Medical Director. I had already assumed the office of Medical Director.

*Q.*—And I want to ask you, Dr. Brown, whether at that meeting in Mr. Childers' house Mr. Penniman offered the position of Medical Director to Dr. Neill? *A.*—Not to my knowledge.

*Q.*—You were there during the entire conversation? *A.*—I was there during all the time.

*Q.*—And you had already been employed as Medical Director then? *A.*—I had already been employed as Medical Director.

*Q.*—Now, do you recall, with relation to that meeting at Mr. Childers' house, when the meeting was at the District Medical Society? *A.*—My recollection is that it was at some time in July, I think along at the end of July or the beginning of August. I know the weather was quite warm, but I can't fix the date exactly.

*Q.*—Do you recall who was present at that meeting, Doctor? *A.*—Well, I have just told you.

*Q.*—I mean at the Medical Society. *A.*—Well, I don't remember all of them. I remember Dr. Neill and Dr. Groover and Dr. Macatee. I really don't remember all of them. There were quite a number.

*Q.*—Who was present with you? *A.*—Mr. Zimmerman and Mr. Penniman.

*Q.*—Do you recall how you all happened to meet that evening at the Medical Society? *A.*—We had discussed it several days before, and finally I was called on the telephone and asked to meet Mr. Penniman and Mr. Zimmerman at the Mayflower Hotel where we were to have dinner together and then proceed to the medical meeting.

*Q.*—Do you recall whether that was the first time that you had met the members of the District Medical Society with regard to the subject matter discussed? *A.*—That was the first time that I had met them.

*Q.*—Now, in pursuance of the arrangement did you or did you not meet at the Mayflower Hotel? *A.*—Yes.

*Q.*—To the Medical Society Building? *A.*—We met there and had dinner there.

*Q.*—Who was at dinner with you? *A.*—Mr. Zimmerman and Mr. Penniman.

*Q.*—And there did you discuss what you should say at the meeting with the District Medical Society? *A.*—My inquiry was what we were meeting for, and they said they were meeting—

*Mr. Lewin:*—Objected to.

*A.*— at the Medical Society—

*Mr. Lewin:*—Objected to as to what they said.

THE COURT:—What is the purpose of this?

*Mr. Leahy:*—You will recall that both Mr. Penniman and Mr. Zimmerman stated that at this meeting—

*Mr. Lewin:*—Well, wait a minute. Wait a minute. I have objected to that. Now, I don't want it led.

THE COURT:—Sir?

*Mr. Leahy:*—Do you want us to go to the bench?

*Mr. Kelleher:*—No; he is addressing the Court.

*Mr. Lewin:*—I thought you were asking a question.

*Mr. Leahy:*—No. I was addressing his Honor.

*Mr. Lewin:*—I am awfully sorry.

*Mr. Leahy:*—Do you want us to go to the bench?

*Mr. Lewin:*—Yes, let us go to the bench.

*Mr. Leahy:*—All right.

(Counsel for both sides approached the bench and conferred with the Court, in a low tone of voice.)

*By Mr. Leahy:*

*Q.*—Doctor, you had just told us that you made an inquiry of Mr. Penniman and Mr. Zimmerman at dinner as to what was the purpose of the meeting. Did they advise you at that time of the purpose? *A.*—They said that the meeting was for the Society and Group Health to try and get together on the organization of Group Health.

*Q.*—Then did you discuss as to how much information you should give the District Medical Society at this meeting? *A.*—I said, "What information are you going to give them, and how far do you want to go with them in their plans?" And the replies from both of them were to go just—not to do any more and not go any further than necessary, to tell them as little as possible.

*Q.*—And following that did you then go to the meeting of the District Medical Society? *A.*—We did. We walked from the Mayflower to the Medical Society on M Street.

*Q.*—Do you recall now whether, as you were about to enter the room where the meeting was to be held, there was anything further said about what should be done? *A.*—The last thing I recall was, "Now don't forget, we'll give them just as little as possible," or words to that effect.

*Q.*—Do you recall how long that meeting lasted, Doctor? *A.*—Yes. It lasted an hour and a half, perhaps.

*Q.*—And do you recall whether the advice which you received there was followed out? *A.*—Pretty fairly, yes.

*Q.*—Do you recall any other meetings now that the District Medical Society ever had with the trustees or any members of the Board? *A.*—Yes. There was an arrangement made at that first meeting to meet the Board of Trustees in the H. O. L. C. assembly room at a later date to be fixed.

*Q.*—And were you present on that occasion, Doctor? *A.*—I was.

*Q.*—Do you remember who else was present for H. O. L. C. on that occasion? *A.*—Almost all of the Board of Trustees were present, and a great many of the committee from the Medical Society.

*Q.*—Do you recall whether anything further was done at that meeting than allow the District Medical Society members to make some remarks? *A.*—That meeting was not as satisfactory, I don't think, as the first meeting. Dr. Groover, I think, did most of the talking at that meeting and told us a great deal about the failures of such organizations in different parts of the country and abroad.

*Q.*—After that did you ever have any other formal meetings of any kind between the District Medical Society and Group Health? *A.*—Not when I was present, no; not any.

*Q.*—And how long, may I ask at this point, Doctor, were you Medical Director of G. H. A.? *A.*—I beg your pardon?

*Q.*—Over what period of time were you the Medical Director of G. H. A.? *A.*—From the payroll date of June 7th until the 30th of April, 1938.

*Q.*—Do you recall, Doctor, when you first became the Medical Director, what arrangements had been made with the hospitals in the District of Columbia, if any, for the reception of patients of G. H. A.? *A.*—There had been none made.

*Q.*—Did you, as Medical Director, make any efforts looking toward that end? *A.*—I had a meeting with Mr. Zimmerman and Mr. Penniman at lunch in the cafeteria at H. O. L. C., and it was decided I would—

*Mr. Lewin* (interposing):—Now, I object.

*A.*——approach—

*Mr. Lewin:*—Wait just a minute. I object to his conversation with Mr. Zimmerman and Penniman.

THE COURT:—Unless I know about what it is I would not be able to pass on it.

*Mr. Leahy:*—Should I approach the bench and tell your Honor?

THE COURT:—I will have to know what it is to determine whether it is admissible.

(Counsel for both sides approached the bench and conferred with the Court, in a low tone of voice.)

*By Mr. Leahy:*

*Q.*—Doctor, I think you were just telling us of a conversation which you had with Mr. Penniman and Mr. Zimmerman with reference to arrangements to be made with the hospitals for the reception of patients of Group Health. *A.*—We met at this lunch at the cafeteria, and it was decided that I would approach the hospitals on the question of courtesy privileges for members of our staff.

*Q.*—Did you so approach the hospitals? *A.*—I did. I went first to the Emergency Hospital where I contacted Mr. Sandidge, who referred me to Mr. Gist Blair in the Union Trust Building.

*Q.*—Did you see Mr. Blair? *A.*—I did.

*Q.*—And then did anything occur, Doctor, which interrupted those negotiations which you were having? *A.*—Major Blair asked me to submit a letter requesting what our desire was. I went down to the office, and in the meantime my office had been in with Mr. Zimmerman at the H. O. L. C. That was my headquarters. I formulated a letter requesting privileges at Emergency Hospital, as suggested by Major Blair, and submitted it to Mr. Penniman. Mr. Penniman contacted Mr. Zimmerman, and it was decided that we would meet again the next day at luncheon in the cafeteria where we had a great many meetings.

*Q.*—And did you meet the next day at luncheon? *A.*—We met the next day, and I was advised at that meeting that they would take care of the hospital situation: that I need give it no further thought.

*Q.*—And following that what did you ever do? *A.*—Nothing whatever.

*Q.*—What occurred with reference to the mail from hospitals coming to you?

*Mr. Lewin:*—Objected to.

*Mr. Leahy:*—Same line, if your Honor please.

THE COURT:—The mail coming to him?

*Mr. Leahy:*—Yes.

*Mr. Lewin:*—Well, was there? Was there mail coming to him?

*Mr. Leahy:*—Well, I will ask that.

*By Mr. Leahy:*

*Q.*—Did mail come to you, Doctor, from hospitals? *A.*—It came to the clinic on I Street. A great many of those letters were directed to the I Street Clinic. That was the headquarters of G. H. A., and they were usually directed to the Medical Director.

*Q.*—Now, did you receive any instructions about mail which was directed to the clinic and to the Medical Director? *A.*—Yes. I opened several of those letters which were directed to the Medical Director; and they were, some of them, from the hospitals, and I would return those to Mr. Zimmerman or Mr. Penniman. Later I was instructed not to open any mail; to send it unopened to them.

*Q.*—From that time of the second luncheon down at H. O. L. C., what authority did you have to deal with the hospitals at all as a Medical Director? *A.*—None whatever.

*Q.*—And who did deal with the hospitals, to your knowledge? *A.*—I think most of it was done by Mr. Penniman.

*Q.*—Do you recall; Doctor, when the clinic itself opened up? *A.*—On November 1.

*Q.*—At that time had you a staff? *A.*—Yes.

*Q.*—Do you recall whether one of the members of the staff was Dr. Raymond E. Selders? *A.*—Yes. I employed Dr. Selders.

*Q.*—For what purpose did you employ Dr. Selders? *A.*—I employed him as a surgeon for the clinic, to do the minor surgery of the clinic.

*Q.*—Did you ever employ him to do general surgery of all kinds? *A.*—No, he was not employed for that reason.

*Q.*—And did you consider him competent to do general surgery, Doctor?

*Mr. Lewin:*—Oh, wait a minute. Objected to.

THE COURT:—Objection overruled. Answer the question.

*The Witness:*—No, I do not think he was competent to do general surgery.

*By Mr. Leahy:*

*Q.*—Now, why do you say that, Doctor? *A.*—Because he hadn't the training or the qualifications.

*Q.*—Did you personally have anything to do with the hospitals of Washington, trying to get privileges to do general surgery in those hospitals for Dr. Selders? *A.*—No, I did not.

*Mr. Lewin:*—Now, wait a minute. He has already testified about that, that he had no further contact with hospitals.

THE COURT:—Well, yes, I think that is true.

*By Mr. Leahy:*

*Q.*—Now, Doctor, with reference to the operation of the clinic, itself, what was your authority therein as the Medical Director? *A.*—My agreement in the beginning was that I was to take complete charge of the medical direction of the clinic and of Group Health, and I accepted the position on that ground. But they didn't need a medical director there, it soon developed. They needed a rubber stamp. That was all that was required.

*Q.*—In other words, what did the Board of Trustees do so far as you were concerned, with reference to those duties which were assigned to you as the Medical Director? *A.*—Well, they took them over themselves, most of them.

*Q.*—And who were those who took them over? *A.*—Mr. Zimmerman, Mr. Penniman, generally.

*Q.*—Doctor, do you recall now how the operations of the clinic proceeded, after it got going? *A.*—I don't just get the idea of your question, Mr. Leahy.

*Q.*—With reference to the efficiency of its functioning. *A.*—When it began, it functioned very efficiently, because we didn't have so many patients. On a small staff of four or five we could handle the patients very well; but gradually they crowded in so that we couldn't give attention to the patients on account of the great numbers of patients with a few doctors.

*Q.*—And did you have complaints from the doctors and members of the staff about that? *A.*—Yes.

*Q.*—Have you any idea, Doctor, as to how many patients a single doctor in a clinic of that character can see reasonably in a professional manner during the course of a day? *A.*—Of course, it depends very largely on the class of patients or conditions that you meet, but the average would be 20, 25 patients a day, would be a good hard day for any doctor in a clinic of that kind.

*Q.*—And do you recall, after the clinic opened and when the patients began coming in, how many patients the doctors would be required to see in the course of a day? *A.*—Well, it ran as high as 60 a day.

*Q.*—Do you think that a doctor can give efficient service, Doctor, to as many as 60 patients in a day? *A.*—I do not.

*Q.*—And how long did this condition continue, Doctor, that you have told us about? *A.*—As long as I was associated with the Group.

*Q.*—Doctor, I think you stated that you employed Dr. Selders. *A.*—I did.

*Q.*—What was your practice with reference to the agreement? Did you ever have written agreements, or were they verbal? *A.*—They were all verbal. There never was a written contract or agreement.

*By Mr. Leahy:*

*Q.*—Do you recall, Doctor, having employed Dr. Lee? *A.*—I do.

*Q.*—Did you employ him under a verbal or written contract? *A.*—Verbal.

*Q.*—Do you recall employing Dr. Scandiffio? *A.*—I do.

*Q.*—Did you employ him under a written or a verbal contract? *A.*—Verbal.

*Q.*—Do you have any knowledge now of what I referred to when I mentioned that there were two proposed written contracts submitted here in evidence? *A.*—Those contracts were gotten up for the sole purpose of presenting them to the Medical Society. They were not in existence before the hearing of Dr. Scandiffio at the Medical Society.

*Q.*—And who prepared those contracts? *A.*—I think they were—Mr. Neuman and Mr. York of the Legal Department of H. O. L. C. prepared them.

*Q.*—Do you recall, Doctor, whether you discussed with both Dr. Lee and Dr. Scandiffio the question of what they should do when they became members of Group Health? *A.*—After they had become members they asked me what they should do, resign from the Society or not. My advice was that they resign from the Society; that I did not belong to the Society, therefore was without their jurisdiction and expected nothing from them.

*Q.*—And do you know whether, now, in pursuance of that advice that you gave them, they did resign from the Society? *A.*—They did.

*Q.*—Then do you know whether after they had tendered their resignations somebody advised them to the contrary?

*Mr. Kelleher:*—Just a second.

*The Witness:*—They withdrew their contract—their resignation.

*Mr. Leahy:*—Just a moment.

*Mr. Kelleher:*—Excuse me, Doctor Brown. The question is, Do you know?

*The Witness:*—I do know.

*Mr. Kelleher:*—Will you bring out how he knows it?

*Mr. Leahy:*—All right.

*By Mr. Leahy:*

*Q.*—How do you know that, Doctor? *A.*—Because they both told me so.

*Mr. Kelleher:*—We object to that, your Honor.

*By Mr. Leahy:*

*Q.*—Do you know as a fact that they did withdraw those resignations after, following your advice, they had resigned? *A.*—I do.

*Q.*—You attended the hearings, didn't you, Doctor? *A.*—Yes.

*Q.*—Do you know that when they tendered those resignations they accompanied—or rather, when they withdrew their resignations they accompanied that withdrawal with a letter, each one of them, identical in terms? *A.*—They said they had done that. I didn't know it, only from them.

*Q.*—I see. Do you know who was on the legal staff at that time?

*Mr. Kellcher:*—Of what organization? Legal staff of what?

*Mr. Leahy:*—H. O. L. C.

*The Witness:*—Mr. York, Mr. Neuman were the principal advisers, and Mr. Russell.

*By Mr. Leahy:*

*Q.*—Was Mr. York present at the trial of Mr. Scandiffio? *A.*—He was.

*Q.*—Dr. Scandiffio. Was Mr. Russell? *A.*—He was.

*Q.*—Was Mr. Neuman? *A.*—He was.

*Q.*—Was Mr. Keely? *A.*—Yes.

*Q.*—Pardon me just a moment. Doctor, further on the question of the operation of the clinic, I wish to ask you this: whether or not Mr. Penniman and Mr. Zimmerman were accustomed to—

*Mr. Lewin:*—Now, I object to that. It is apparently leading. Apparently leading.

THE COURT:—I haven't got enough of it to determine.

*Mr. Leahy:*—To tell you the truth, your Honor, I haven't had the thing in mind yet.

*Mr. Lewin:*—Well, it starts out like a very leading question, to me.

THE COURT:—Well, let us try to avoid leading questions, Mr. Leahy.

*By Mr. Leahy:*

*Q.*—I will put it this way, Doctor, to you: Can you give us any other instance of where Mr. Penniman or Mr. Zimmerman displayed any interest in the operation of the clinic and its general administration by you? *A.*—Displayed a great deal of interest in the clinic, interfered quite frequently in small things, and would frequently meet Dr. Selders and other members of the staff outside of the clinic and discuss matters that should properly have come before the Medical Director and, through him, to the trustees. There was a great deal of interference in many ways.

*Q.*—Any inquiries with reference to the number of patients treated or how they were treated? *A.*—I don't think so; not that I recall.

*Q.*—When was it, again, you said that you left G. H. A., Doctor? *A.*—April 30, 1938.

*Q.*—Do you recall, Doctor, whether just before you left you became ill? *A.*—I certainly do.

*Q.*—And how long were you ill? *A.*—About a month, six weeks.

*Q.*—What time was it you were ill? *A.*—In February I became ill with pneumonia following a very bad cold, and was ill up through March.

*Q.*—Do you recall, Doctor, now, how the staff was selected for the clinic? *A.*—I selected the staff, both professional and lay, almost entirely, with one exception, and that was Dr. Dabney, whom I had contacted and was asked to present him to the Board of Trustees. Later I received a telephone call—

*Mr. Lewin* (interposing):—Just a minute.

*A.*—to send Dr. Dabney—

*Mr. Lewin:*—Just a minute. Just a minute, Dr. Brown.

*By Mr. Lewin:*

*Q.*—In pursuance of the telephone call did you send Dr. Dabney anywhere? *A.*—To Mr. Loomis and Mr. Russell, who employed him.

*Q.*—Then, you, as the Medical Director, did not arrange the employment of Dr. Dabney? *A.*—I did not.

*Mr. Lewin (sotto voce):*—He was ill at the time.

*By Mr. Leahy:*

*Q.*—And in what capacity was Dr. Dabney to serve on the staff? *A.*—The nose and throat specialist.

*Q.*—Doctor, did you know Mr. Kirkpatrick? *A.*—Yes, I did.

*Q.*—When did you first meet him? *A.*—I met him early in the organization of Group Health, at the H. O. L. C. Building.

*Q.*—Did he have any position in H. O. L. C.? *A.*—He was the second president of the Group Health and was vice-president under Mr. Penniman.

*Q.*—How frequently, if at all, was he in? *A.*—I didn't get that.

*Q.*—How frequently was he in the clinic? *A.*—Until he was president he didn't take much interest in the clinic.

*Q.*—And when did he become president? *A.*—He followed Mr. Penniman and then took over the prerogatives of the office of president of Group Health and was frequently at the clinic.

*Q.*—And what was his attitude toward you? *A.*—His attitude was—

*Mr. Lewin:*—Wait a minute. I object to that.

*By Mr. Leahy:*

*Q.*—In reference to your administration of the clinic. *A.*—Why, satisfactory, I think.

*Q.*—Was anything done at all toward contacting patients or anything of that sort? *A.*—Yes. They circulated a great deal among the patients when they came to the clinic. Just what occurred, I don't know.

*Q.*—By the way, at any time did Mr. Penniman and Mr. Zimmerman express to you in any way what their opinion of doctors was, in general?

*Mr. Lewin:*—Objected to.

*The Witness:*—Yes.

*Mr. Lewin:*—Wait a minute. Objected to.

THE COURT:—"Doctors in general"?

*Mr. Leahy:*—Yes.

THE COURT:—Well, that is a pretty broad question.

*Mr. Leahy:*—That is right.

THE COURT:—Sustain the objection.

*By Mr. Leahy:*

*Q.*—Didn't they at any time manifest in any manner their opinion towards the doctors of organized medicine?

*Mr. Lewin:*—Objected to as completely irrelevant, immaterial, incompetent.

THE COURT:—It is completely irrelevant except for the possible bias it may show in the testimony of the witnesses.

*Mr. Leahy:*—That is it.

THE COURT:—If they had any ill feeling towards doctors and organized medicine, it might affect their testimony here. Objection overruled.

*The Witness:*—Their attitude toward the profession generally was not at all good.

*Mr. Lewin:*—Wait just a minute.

*The Witness:*—They held doctors in more or less contempt.

*Mr. Lewin:*—Wait just a minute.

THE COURT:—I think that is a little broad: the doctors in contempt.

*Mr. Lewin:*—I move that be stricken, may it please the Court.

THE COURT:—Yes, that will be stricken. The question is what if anything they said antagonistic to doctors and organized medicine.

*Mr. Leahy:*—Yes.

*The Witness:*—They very frequently, especially Mr. Penniman, presented me with anything that was—

*Mr. Lewin* (interposing):—Wait.

*A.*—against the doctor.

*Mr. Lewin:*—Wait. Objected to, and move that be stricken.

*Mr. Leahy:*—That is all right.

*Mr. Lewin:*—Now, he hasn't said what Mr. Penniman said about any particular doctors and organized medicine.

THE COURT:—I think the question is what he said, what he may have said with reference—

*Mr. Leahy:*—Well,—

*Mr. Lewin:*—May that be stricken, your Honor?

*Mr. Leahy:*—Just a moment, please.

THE COURT:—Just a minute. I will see, Mr. Leahy.

*Mr. Leahy:*—The point is, if your Honor please, that Mr. Penniman would present certain things to him which were derogatory to doctors and the medical profession, and then they would have statements about it.

*Mr. Lewin:*—Well, now, that is—

THE COURT:—Then they would have what?

*Mr. Leahy:*—Then they would have talk back and forth about it.

THE COURT:—Conversation?

*Mr. Leahy:*—Yes.

THE COURT:—Well, then if that is merely preliminary to the conversation, he may show it. I don't think otherwise it would be competent.

*Mr. Leahy:*—Well, that is what I intended the question to elicit, your Honor.

THE COURT:—Proceed.

*The Witness:*—Shall I proceed?

*Mr. Leahy:*—Yes.

*The Witness:*—One day Mr. Penniman came in with a very scathing article from a West Coast paper regarding a patient in a hospital out there, and he passed it to me to read. It was a very nasty article. I read it very slowly, and after reading it I passed it to Mr. Penniman, and said, "Mr. Penniman, you don't want to forget that I am a doctor, and I don't want any more such things from you."

*Mr. Lewin:*—Wait. Objected to.

*The Witness:*—After that there was nothing ever said further on that subject.

*Mr. Lewin:*—Wait just a minute now. I move, then, that that be stricken, with regard to some article against a West Coast doctor, and nothing transpired except that.

*Mr. Leahy:*—Oh, no; that wasn't it.

*Mr. Lewin:*—Totally—

*Mr. Leahy:*—A scathing article about doctors, growing out of an incident on the West Coast.

*Mr. Lewin:*—Removed from this case by the breadth of the continent, and nothing said with regard to it, except that he hands him this article.

THE COURT:—It may go out. I think that may go out. It is rather indefinite.

*Mr. Leahy:*—I beg your Honor's pardon.

THE COURT:—I think it is rather indefinite. I assumed, from what you told me, that what followed elicited certain derogatory remarks from Mr. Penniman himself; but apparently, as the doctor states, there was nothing said by Mr. Penniman.

*By Mr. Leahy:*

*Q.*—Well, had Mr. Penniman, Doctor, ever said anything to you of the character or type contained in the article?

*Mr. Lewin:*—I object to that because he has just said he said nothing more except give him the article.

THE COURT:—I don't know whether he said it or not, but he may say now whether Mr. Penniman made any remark to him in that conversation.

*The Witness:*—He did at that time and on many previous occasions; he would hold the doctors in more or less disdain and state, "Well, they don't amount to much."

*Mr. Lewin:*—Well, wait. I object to that as a conclusion. We ought to have what he said.

*By Mr. Leahy:*

*Q.*—Well, tell us what he said, as best you recall, Doctor?

*Mr. Richardson:*—The substance.

*The Witness:*—Well, he said, "They are not up to date. They are not businesslike." They don't know how to do this, and they don't know how to do that. A lot of trivial stuff; it didn't amount to anything. It only showed his attitude; that was all.

*Mr. Lewin:*—I object to the fact that it showed his attitude.

THE COURT:—Well, that may go out.

*By Mr. Leahy:*

*Q.*—Well, now, Doctor, there has been some testimony here that there were a number of, I think they call them, elective operations when Mr. Kirkpatrick took office. Do you recall whether there were or were not members of Group Health who had elected to be operated on? *A.*—Yes, there were quite a number.

*Q.*—Could you tell us, what is the difference between an elective operation and any other kind of operation? *A.*—An elective operation is one that can be done at any time. An emergency operation is one requiring immediate attention.

*Q.*—Have you any idea now as to about how many such elective operations there were while you were there? *A.*—Quite a few. I don't just recall how many, but 60, 75, something of that kind.

*Q.*—And do you know now why it was that those elective operations were not performed? *A.*—Well, some of them were major operations, and I didn't want Dr. Selders to do them, unless they were simple cases. And the other was that the hospitals were not admitting the cases, although we admitted all emergency cases to the hospital, or those that were supposed to be emergency cases.

*Q.*—And do you recall at that time what the funds were in order to perform an operation?

*Mr. Lewin:*—Objected to.

THE COURT:—I don't understand just what the situation is.

*Mr. Leahy:*—Mr. Kirkpatrick stated. He said the only reason why these elective operations couldn't have been performed is that Dr. Selders was not allowed to go in the hospital.

*Mr. Lewin:*—Well, now, this witness has given two reasons why they were not done.

*Mr. Leahy:*—No. He has given one.

*Mr. Lewin:*—He has given two.

*Mr. Kelleher:*—He has given two.

*Mr. Leahy:*—Well, there might have been 20.

*Mr. Lewin:*—Well, that is—

THE COURT:—Well, if Mr. Kirkpatrick said there was only one, and there were several, why, I suppose we might as well have them all now.

*Mr. Lewin:*—Well, now, then, let us qualify this witness on the finances, then, if you can do that.

THE COURT:—It isn't a question of finance. It is a question of what instructions, if any, he had with reference to the handling of such matters, if he had any, from either Mr. Kirkpatrick or Mr. Penniman.

*Mr. Lewin:*—Oh, that wasn't the question, your Honor.

*Mr. Leahy:*—I will ask that. I will adopt his Honor's question.

THE COURT:—I thought that is what you had in mind.

*Mr. Leahy:*—That is what I had—

THE COURT:—That is what I thought.

*By Mr. Leahy:*

*Q.*—What instructions, if any, did you have from any of the responsible officials of G. H. A. with reference to dealing with these operations, Doctor? *A.*—Well, the instructions were to put as few in the hospital as possible because funds were low.

*Mr. Lewin:*—I move that be stricken, "because funds were low." His instructions were not to put them in the hospital, and in these instructions—

*Mr. Richardson:*—"Because funds were low."

*Mr. Lewin:*—I object to that last.

THE COURT:—Well, that may stand.

*By Mr. Leahy:*

*Q.*—Do you recall, now, Doctor, whether, in pursuance of this opinion you had about Dr. Selders while you were still there, you had made any attempts whatsoever to supplant him?

*Mr. Lewin:*—Wait a minute.

*The Witness:*—Yes.

*Mr. Lewin:*—Wait a minute. I object to that, may it please the Court.

THE COURT:—I didn't quite get that, Mr. Leahy.

*Mr. Leahy:*—I asked if he had been attempting to find some one else to take Dr. Selders' place as the surgeon in G. H. A.

*Mr. Lewin:*—I object to that as irrelevant.

*Mr. Leahy:*—It is not irrelevant because it is directly—confirms his opinion as to what he did.

*Mr. Kelleher:*—It is what?

*Mr. Lewin:*—"Confirms it."

THE COURT:—It may be a circumstance in favor of his opinion that Dr. Selders was incompetent to do such work, but I wouldn't want to go into any detail about it.

*Mr. Leahy:*—Oh, no; I am not going to.

*By Mr. Leahy:*

*Q.*—Doctor, what efforts did you make, if any, to find another physician to take Dr. Selders' place?

THE COURT:—I think it is just a question of whether he did or not.

*By Mr. Leahy:*

*Q.*—Did you make such an effort? *A.*—I did.

*Q.*—Do you recall about when you made that effort? *A.*—Sometime in the latter part of January or early in February.

*Q.*—How did you first come to meet Dr. Selders? *A.*—I contacted Dr. Selders through the Chicago Physicians' Exchange.

*Q.*—What is that? *A.*—It is a sort of an employment bureau for professional people, technicians, and so forth.

*Q.*—Doctor, do you recall now with reference to the membership of G. H. A. in the H. O. L. C., whether, after the clinic had been going a while—

*Mr. Lewin:*—If your Honor please, obviously this is going to be a leading question.

THE COURT:—I cannot tell yet. You can scent a leading question better than I can, Mr. Lewin. I have to hear the complete question.

*Mr. Lewin:*—My objection, when counsel is testifying like that, is likely to come too late. After the testimony has been given by counsel, the objection comes too late.

THE COURT:—Try to avoid leading questions, Mr. Leahy.

*Mr. Leahy:*—Yes, your Honor.

*By Mr. Leahy:*

*Q.*—Doctor, can you tell us what, if any, changes occurred in the membership of Group Health Association while you were the Medical Director? *A.*—I do not quite get your question, Mr. Leahy.

*Q.*—Numerically speaking, were there any changes in the membership? *A.*—Oh yes. The membership grew very rapidly.

*Q.*—When did it begin to grow? *A.*—After 70 per cent of the H. O. L. C. membership joined Group Health, then it opened up for other Government departments, and then there was a great rush of applications for membership.

*Q.*—Do you recall what, if anything, happened to the H. O. L. C. men? *A.*—A great many of them dropped out.

*Q.*—Do you recall now, Doctor, what Government departments came in? *A.*—The greater number, I believe, came from the Agricultural Department, who subsequently were so strong that they took over the management.

*Mr. Lewin:*—Wait just a minute.

*By Mr. Leahy:*

*Q.*—Do you recall now, Doctor, whether Mr. Penniman, Mr. Zimmerman and Mr. Kirkpatrick did anything toward getting in new members in G. H. A.? *A.*—Yes.

*Mr. Lewin:*—We object to that.

THE COURT:—Objection sustained.

*Mr. Leahy:*—May we approach the bench, your Honor?

THE COURT:—Yes. You may have some reason for it that I cannot think of.

(Counsel for both sides approached the bench and conferred with the court in a low tone of voice.)

*Q.*—Doctor, during the course of your administration as the Medical Director of G. H. A. did you or did you not have occasion to interview applicants for membership on the staff? *A.*—A great many; yes.

*Q.*—From what sections of the country would they come? *A.*—The applications and the interviews were with quite a number from different parts of the country, New York, New Jersey, Pennsylvania, the District of Columbia, Virginia, and as far as West Virginia and Kentucky, and then a correspondence resulting from that, from different parts of the country.

*Q.*—When these applicants came there whom would they seek? *A.*—They would see me.

*Q.*—And you would show them through the clinic, I presume? *A.*—I interviewed a great many before we had a clinic, and a great many after the clinic was opened.

*Q.*—Did you do that personally, yourself? *A.*—Yes, sir.

*Q.*—Whatever terms were reached as to the employment of any physician were reached by you? *A.*—Yes.

*Q.*—Doctor, do you recall now the rate of dues charged when you first became Medical Director?

*Mr. Lewin:*—I object as irrelevant and immaterial.

THE COURT:—I do not think it is material. Objection sustained.

*Mr. Leahy:*—Perhaps I might follow it with this question, and maybe the relevancy will be seen.

*By Mr. Leahy:*

*Q.*—Doctor, under the schedule of dues charged by G. H. A. what, if anything, have you to say of the capacity of G. H. A. to give adequate and complete medical care?

*Mr. Lewin:*—Objected to as irrelevant and immaterial; and I suggest that it falls under your Honor's previous ruling with regard to similar questions.

*Mr. Leahy:*—This is directly within his Honor's ruling with reference to what representations were made as to what this clinic could do for its subscribers. It was testified to on the very first day of the trial.

THE COURT:—Is it part of the indictment?

*Mr. Leahy:*—Yes, your Honor—adequate medical care.

*Mr. Lewin:*—There is no allegation about the dues or its financial ability, or anything of that sort.

*Mr. Leahy:*—No; it is for adequate medical care.

THE COURT:—I am inclined to sustain the objection. I think we are going too far into collateral issues. Objection sustained.

*Mr. Leahy:*—Would your Honor permit us to approach the bench on that point?

THE COURT:—Yes.

(Counsel for both sides approached the bench and conferred with the court in a low tone of voice.)

*By Mr. Leahy:*

*Q.*—Doctor, did there come a time when you resigned from G. H. A.? *A.*—Yes; there did come a time when I resigned.

*Q.*—When was that, Doctor? *A.*—That was the latter part of March.

*Q.*—How long following your illness? *A.*—I was just convalescing, just recovering from my illness. I went down to H. O. L. C. one day to talk things over, and it was indicated to me that my resignation would be accepted.

*Q.*—Is that when you resigned? *A.*—That is when I resigned.

*Q.*—Who indicated that? *A.*—Mr. Penniman, who was always the spokesman for the group.

*Q.*—Was anybody else present on that occasion? *A.*—Mr. Zimmerman, Mr. Kirkpatrick, Mr. Penniman—I don't know that there were any others.

*Q.*—Could you tell us why you resigned?

*Mr. Lewin:*—Objected to.

THE COURT:—Objection sustained.

*By Mr. Leahy:*

*Q.*—Doctor, in the chats which you had with the various doctors who came there and whom you interviewed as possible members of the staff, what interference, if any, was there from the District of Columbia Medical Society or any of its members? *A.*—I never had any interference from the Society.

CROSS EXAMINATION

*By Mr. Kelleher:*

*Q.*—Dr. Brown, did you not know that Dr. Trible had refused to become a consultant for Group Health Association—*A.*—Dr. who?

*Q.*—Dr. Trible—until— *A.*—He was never asked by me to become a consultant.

*Q.*—Let me finish my question, please—until G. H. A. could be organized along lines compatible with organized medicine? *A.*—As far as I am concerned, I never asked him to be a consultant of Group Health or anything else that I am aware of.

*Q.*—Did you ask him for advice about Group Health Association? *A.*—I talked with him a great deal about Group Health and with a great many other doctors.

*Q.*—Did he not tell you that he could not have anything to do with G. H. A. or anything else unless it met the full approval of the District Medical Society? *A.*—I don't recall such a conversation.

*Q.*—Did you execute an affidavit for Dr. Trible in response to a request from him? *A.*—Yes, sir.

*Q.*—I show you Exhibit No. 570 and ask you if that is a photostatic copy of the affidavit which you executed? *A.*—It has my signature on it. It is.

*Q.*—Is that your affidavit? *A.*—Yes.

*Q.*—In that affidavit do you not state that Dr. Trible had—

*Mr. Leahy:*—Show him the affidavit.

*Mr. Kelleher:*—I showed it to him.

*Mr. Leahy:*—Point to what you are asking about.

*By Mr. Kelleher:*

*Q.*—In that affidavit did you not state that Dr. Trible had refused to have anything to do with G. H. A. until it was approved by the District Medical Society? *A.*—I don't recall it. It may be there, but I don't recall it. (After reading document referred to.) Apparently that is right.

*Q.*—Did you not also attempt to obtain the services of Dr. Cromer? *A.*—Dr. who?

*Q.*—Dr. J. Keith Cromer. Do you remember Dr. Cromer? *A.*—No; I do not.

*Q.*—Don't you remember talking with a gentleman in Washington by the name of Cromer concerning his coming with G. H. A.? *A.*—There were so many of those men that I do not really recall the names of all of them. I interviewed a great many, and the names of a great many have gone from my mind.

*Q.*—Let me show you what purports to be a letter from Cromer to you, dated Oct. 26, 1937, and ask you whether that refreshes your recollection as to whether you ever talked with Dr. Cromer. *A.*—Yes. I remember him now.

*Q.*—You remember it now. Did you ask Dr. Cromer to come to G. H. A. on the medical staff? *A.*—Yes.

*Q.*—Is this (indicating) the reply you received from Dr. Cromer? *A.*—I don't quite recall. It is not very clear in my mind. It is no doubt a fact.

*Mr. Kelleher:*—I offer the letter in evidence (handing paper to Mr. Leahy).

*By Mr. Kelleher:*

*Q.*—While counsel is examining that document I will go over another matter. Did you also attempt to secure the services of Dr. C. Tiemeyer? *A.*—Yes.

*Q.*—In Baltimore? *A.*—Yes.

*Q.*—Did you ask him to come on the staff of G. H. A.? *A.*—Yes.

*Q.*—Is this a letter which you received in reply from Dr. Tiemeyer (handing paper to the witness)? *A.*—Yes.

*Mr. Kelleher:*—I offer it in evidence as U. S. Exhibit 670.

*Mr. Leahy:*—They are both objected to as pure hearsay.

*Mr. Kelleher:*—Would your Honor care to hear my reason for offering them?

THE COURT:—I will hear you both on it.

(Counsel for both sides approached the bench and conferred with the court in a low tone of voice.)

U. S. EXHIBIT 669

*Mr. Kelleher:*—U. S. Exhibit 669 is a letter from J. Keith Cromer, M.D., to Dr. Brown, dated Oct. 16, 1937 and reads as follows:

"Dear Dr. Brown:

"Pursuant to our recent conversation I wish to state that I would be glad to take care of the obstetrical work for your clinic on a part-time basis if and when such consultation work is recognized by the District Medical Society. I hope you understand my position in this matter.

"Very truly yours,
"J. Keith Cromer, M.D."

*By Mr. Kelleher:*

*Q.*—Did Dr. Cromer ever come with Group Health Association while you were there? *A.*—Did he what?

*Q.*—Did he ever come with Group Health Association as a consultant while you were there? *A.*—He took care of quite a few obstetrical cases for Group Health; yes.

*Q.*—Was he retained as a consultant? *A.*—Yes.

*Q.*—On a salary? *A.*—No; by the case.

*Q.*—On a fee-for-service basis? *A.*—Yes.

*Q.*—He never came there on a salary basis? *A.*—No, sir.

*Q.*—Dr. Brown, when you were testifying that some of the lay members of Group Health Association circulated among the patients that were attended by the doctors of G. H. A., you did not mean that there was any interference with the treatment of patients by lay members, did you? *A.*—I don't think that I made a statement that there was, so far as I recall.

*Q.*—I just wanted to clarify that, that there was no interference with the treatment. *A.*—No, sir.

*Q.*—At any time, to your knowledge? *A.*—Not that I know of.

*Q.*—Dr. Brown, you determined the amount of the salaries that were to be paid to the doctors, did you not? *A.*—That was pre-agreed on; yes.

*Q.*—And you also passed on the qualifications of the doctors who came with G. H. A.? *A.*—I did.

*Q.*—And your recommendations were invariably accepted by the board of trustees while you were there? *A.*—They were, with one exception; and that was Dr. Dabney.

*Q.*—When was Dr. Dabney employed by G. H. A.? *A.*—Sometime in February or March, the beginning of March, or along in there sometime; I don't just recall.

*Q.*—That was while you were sick? *A.*—Yes.

*Q.*—With reference to Dr. Selders, did you not believe that he was a qualified man as a doctor? *A.*—When I employed him I believed that he was qualified to do clinical work and minor surgery, and the other work I intended to give to consultants outside.

*Q.*—Did you not believe he was a finely qualified doctor? *A.*—No; I did not; not for general surgery.

*Q.*—Did you believe he was finely qualified for whatever work he was equipped to do? *A.*—For clinical work, minor surgery.

*Q.*—A finely qualified doctor? *A.*—A very well qualified doctor in minor surgery for clinical work in the clinic.

*Q.*—Would you say an appendectomy is a minor operation? *A.*—It is a major operation, but there are very difficult appendectomies and there are very simple appendectomies.

*Q.*—But, in general, an appendectomy is a major operation? *A.*—The average is; yes.

*Q.*—Did you not know as of December 1937, when you testified in the Lee and Scandiffio hearing, that Dr. Selders was performing appendectomies at Garfield Hospital? *A.*—He did perform an appendectomy at Garfield Hospital, and I was with him.

*Q.*—And at that meeting of the Executive Committee did you not tell the committee that you considered Dr. Selders a finely qualified doctor? *A.*—Yes; but it was not qualified.

*Q.*—Your answer was not qualified? *A.*—That statement at that meeting was not qualified. He was very well qualified for the work that I had in mind for him.

*Q.*—And at that time you also told the Executive Committee that he was doing appendectomies at Garfield Hospital? *A.*—I did. They were very simple cases.

RE-DIRECT EXAMINATION

*By Mr. Leahy:*

*Q.*—Doctor, what did you mean when you stated that you were with him when he operated? *A.*—I went as a witness; I went with him to the operation and was present at the operation.

*Q.*—You are thoroughly familiar with appendectomies, are you? *A.*—Absolutely. I did many of them myself in my time.

*Q.*—So you stood right by him? *A.*—I stood as an observer, close to him; yes.

*Q.*—Who was it that fixed the salaries of the doctors on the staff? *A.*—That was a matter of discussion and agreement.

*Q.*—With reference to any limitation in amount which you were authorized to pay, was there or was there not such a limitation? *A.*—Well, there was a limitation as to the qualifications of the man. The limits were put on at $4,800 per year to begin with. Anything outside of that naturally would have to be taken up with the Executive Committee or the board of trustees.

*Q.*—Who would determine whether you could give a man more money or not? *A.*—That was a matter for the board to determine.

*Mr. Leahy:*—May we approach the bench for just a moment on the matter of the evidence which we were going to try to find for your Honor?

THE COURT:—Yes.

(Counsel for both sides approached the bench and conferred with the court in a low tone of voice.)

RE-CROSS EXAMINATION

*By Mr. Kelleher:*

*Q.*—How old are you, Dr. Brown? *A.*—I am over 70.

*Mr. Kelleher:*—That is all.

TESTIMONY OF MRS. BETTY LOGSDON

DIRECT EXAMINATION

*By Mr. Leahy:*

*Q.*—By whom are you employed? *A.*—Dr. Warfield.

*Q.*—How long have you worked for him? *A.*—Since 1936.

*Q.*—In what capacity? *A.*—Secretary.

*Q.*—Do you recall, to be specific, a question which was asked you when you were here as a witness for the Government, with reference to sending out some questionnaires? *A.*—Yes.

*Q.*—Do you recall the question as to whether you had sent those questionnaires to hospitals? *A.*—Yes.

*Q.*—Do you recall now how you answered?

*The Witness:*—I think I said that my best recollection was that I had mailed them out.

*Q.*—Have you refreshed your recollection since? *A.*—Yes. After going back to the office I realized that I had made an incorrect statement.

*Q.*—Do you wish to correct it? *A.*—Yes; I would like to.

*Q.*—Did those questionnaires go to hospitals? *A.*—No.

*Q.*—To whom did they go? *A.*—They were mailed to members of the Hospital Committee.

*Q.*—Hospital Committee of what organization? *A.*—Just the Hospital Committee; that is all I know.

*Q.*—And you did not mail any of them to the hospitals? *A.*—No; I did not.

CROSS EXAMINATION

*By Mr. Lewin:*

*Q.*—Did you mail each one of those questionnaires to the doctors whose names appear on that list (indicating), which is U. S. Exhibit 312? *A.*—Well, I don't know exactly who the members of the Hospital Committee were. I recall that copies were sent members of the Hospital Committee, but I could not definitely say who they were at that time.

*Q.*—You cannot remember to whom you sent them? *A.*—No; I cannot.

*Q.*—What refreshed your recollection that you sent them to the Hospital Committee? *A.*—Going back to the office and thinking it over, I remembered very distinctly that they were not sent to the hospitals.

MARCH 31—MORNING

(At a meeting in the Court's chambers, attorneys for the defense offered a number of documents. These included records produced by Mr. J. Francis Moore and Mr. Logan S. Cain on March 11, 1941, for the purpose of showing money advanced by the funds; also one that has to do with the issue of solicitation and coercion of employees of the Federal Home Loan Bank Board to join Group Health Association. The Court said it may be identified and considered as offered and refused, over the objection of Government counsel.)

There were also a number of documents covering the $40,000 from the Home Owners Loan Corporation; also a letter written in the fall of 1937 by Mr. Russell, General Counsel, pertaining

to the legality of the setup; also one written in the spring of 1938 on the same issue of legality. Next were offered the annual reports of the Twentieth Century Fund, Inc. also refused.

Next was a report on examination of accounts of the Twentieth Century Fund, Inc., from March 1, 1936 to Feb. 28, 1937; and the same with reference to the records of the Joint Committee of the Twentieth Century Fund and the Good Will Fund.

The Court also ruled out any proffer of testimony with reference to the district attorney's office and the corporation counsel's office on the question of legality; and also the comptroller's office.

Mr. Leahy also offered some pleas which have been filed by G. H. A. in two suits in our court against G. H. A. Those pleas set up what G. H. A. alleges to be the trade in which they are engaged. They describe just what they undertook to do and just what they are doing, alleging that they are employing doctors to look out for patients; that those doctors were negligent in taking care of patients. In reply to those allegations G. H. A. has set up what it considers to be its trade or its business and what it is engaged in; and we offer those pleas as an admission of G. H. A. as to the character and type of the trade it is conducting, the Court sustained the objection.

(Subsequently Mr. Magee gave to the reporter the court files in the case of *Kennedy* v. *Group Health Association, Inc., et al.*, Civil Action No. 6436, and *Kramer* v. *Group Health Association, et al.*, Civil Action No. 2474.

Mr. Leahy also offered two letters written by Selders, stating that he was dealing with a group which was being managed and administered by a lay board and that he was suffering interference from the lay board in the matter of his selection of doctors.

(The jury reentered the court room and resumed their seats in the box.)

### TESTIMONY OF DR. HENRY ROLFE BROWN

#### DIRECT EXAMINATION (RESUMED)

*By Mr. Leahy:*

*Q.*—Doctor, there was one question which I wished to ask you. In your judgment as the Medical Director of G. H. A., was G. H. A. giving adequate medical care to its subscribers? *A.*—A great many members of Group Health resigned because they did not believe they were getting sufficient medical care; and I do not believe that any doctor can give adequate medical care to forty, fifty or sixty patients daily.

#### CROSS EXAMINATION

*By Mr. Lewin:*

*Q.*—Doctor, I show you an exhibit marked No. 671 and ask you if that is your signature that appears on the bottom thereof? *A.*—Yes; it is.

### TESTIMONY OF DR. DANIEL L. BORDEN

#### DIRECT EXAMINATION

*By Mr. Leahy:*

*Q.*—Doctor, over the week end did you look for the application of Dr. Selders on which the Academy of Surgery acted? *A.*—Yes; I did.

*Q.*—Also the letter of transmittal requesting you to report? *A.*—Yes.

#### DEFENDANTS' EXHIBIT 55

*Mr. Leahy:*—Defendants' Exhibit 55 is on the letterhead of the Columbia Hospital for Women, Washington, D. C., dated Nov. 26, 1937 and reads as follows:

"Washington Academy of Surgery,
Care of Dr. H. H. Kerr,
1744 N Street N.W.
"Gentlemen:

"I am directed by the Medical Board of this hospital to request your cooperation and advice, as proffered some time ago, in the matter of an application for courtesy privileges in major gynecological surgery and operative obstetrics.

"Dr. Raymond E. Selders, an employee of the medical cooperative or insurance organization recently formed by employees of the Home Owners Loan Corporation, is applying for such privileges and, as you can see by the enclosed copy of his application, he has not presented evidence of the high degree of training and large experience in gynecology and obstetrics which this hospital has usually demanded of those seeking privileges in Classes 1 and 2, although he may have had both.

"Because of the peculiar circumstances of this case and the Medical Board's desire to act in a fair and judicial manner, your advice will be greatly appreciated.

"Very truly yours,
"P. M. Ashburn, M.D.,
"Secretary of the Medical Board."

#### DEFENDANTS' EXHIBIT 56

Defendants' Exhibit 56 is the application of Dr. Raymond E. Selders:

"Give name of Medical Board or Courtesy Staff physician for reference. "Walter E. Lee, M.D., Surgeon, Philadelphia. John D. Moore, Past President, Medical Association of Texas."

*By Mr. Leahy:*

*Q.*—Just tell where you got the Hugo address. *A.*—I got it from him, on that letter. That is, he gave me that copy.

*Q.*—I am now showing you what has hitherto been introduced in evidence and read by you on Friday, Defendants' Exhibit 54, dated Jan. 12, 1938, Hugo, Okla. Is that where you got it? *A.*—Yes, sir.

#### CROSS EXAMINATION

(There was a long cross-examination concerning the confusion between Drs. Moore of Texas and of Hugo, Okla.)

## REBUTTAL

### TESTIMONY OF MRS. CHARLES HARDIN

#### DIRECT EXAMINATION

*By Mr. Kelleher:*

*Q.*—On June 19, 1938 your husband became sick with appendicitis? *A.*—Yes.

*Q.*—And Dr. Solette was called by you? *A.*—Yes.

*Q.*—And then Mr. Hardin was taken to the hospital and operated on? *A.*—Yes.

THE COURT:—I think the jury will recall all that.

*By Mr. Kelleher:*

*Q.*—When Dr. Solette came to the house after you called him, did you have any conversation with him concerning Group Health Association? *A.*—Yes, I did.

*Q.*—What was that conversation? *A.*—He said Group Health doctors were not permitted to operate in the hospitals. He said that and, therefore, he suggested calling another surgeon to prevent any further waste of time.

*Q.*—What did you say about Group Health? *A.*—I said we were members of Group Health and he wanted to know about who should operate, and I said we were members of Group Health; and he said it would be a waste of time to call in a Group Health doctor at that time; that Group Health doctors were not allowed to operate in the hospitals.

*Q.*—Did Dr. Solette suggest Dr. Bachrach? *A.*—Yes.

*Q.*—And did Dr. Bachrach come and examine your husband? *A.*—Yes.

*Q.*—Was there any conversation concerning Group Health in Dr. Bachrach's presence? *A.*—When Dr. Solette said "These people are members of Group Health, but I have already told them Group Health doctors are not permitted to operate," Dr. Bachrach said "that is right."

*Q.*—Did you conduct the negotiations with Dr. Solette about Dr. Bachrach coming in and seeing the patient? *A.*—Yes.

*Q.*—Did your husband participate in them at all? *A.*—No, other than that he said whatever I said was all right.

*Q.*—And whatever occurred that evening there with Dr. Solette and Dr. Bachrach, that was done in your presence? *A.*—Yes.

#### CROSS EXAMINATION

*By Mr. Leahy:*

*Q.*—Do you recollect whether Dr. Solette mentioned some other names at that time? *A.*—He did.

*Q.*—Who were they? *A.*—There were several doctors; the only one I recall at this time is Dr. Cafritz; others were mentioned, two others; I don't recall at this time who they were.

### TESTIMONY OF DR. MARIO SCANDIFFIO

#### DIRECT EXAMINATION

*By Mr. Kelleher:*

Mario Scandiffio, Medical Director of Group Health Association, said he obtained his medical degree from George Washington University in 1928. He spent three years of internship and residency at the New York Postgraduate School and Hospital; since then he has been in private practice in pediatrics. He came originally from Rhode Island.

*Q.*—Doctor, when did you become associated with Group Health Association? *A.*—On Nov. 1, 1937.

*Q.*—What were your duties when you came to Group Health Association? *A.*—My duties at the time were as pediatrician to Group Health.

*Q.*—Who was Medical Director of Group Health Association when you first came there? *A.*—Dr. Henry Brown.

*Q.*—Doctor, was it customary during 1938 for Group Health Association Clinic to keep records of the number of patients seen by doctors on the staff of Group Health? *A.*—Yes, it was.

*Q.*—Will you describe the nature of the records which were so kept? *A.*—Each doctor listed his patients "seen" in a book, which was in his own keeping. From this book daily and monthly summaries were made by the staff; the clerical staff.

*Q.*—Are those records you speak of under your control now as Medical Director? *A.*—They are.

*Q.*—Have you produced here in court the daily and monthly summaries showing the treatments by Dr. Richard Price? *A.*—Yes, I have those.

*Q.*—Do you have all of the daily summaries concerning Dr. Price's treatments? *A.*—Not all; the month of September 1938 is missing.

*Q.*—But the daily and monthly records are missing? *A.*—Both daily and monthly; all records for that month are completely missing.

*Q.*—Now, do you have the daily record showing the treatments by Dr. Price for the rest of the year of 1938? *A.*—Yes, I have.

*Q.*—All of them, Dr. Scandiffio? *A.*—All of them with—I should say—with the exception of about 13 days throughout the year.

*Q.*—For the days for which you have no record, can you tell us where those records are? *A.*—No, I could not.

*Q.*—Have you made a search for them? *A.*—Yes, we have searched thoroughly for them and they are completely missing.

*Q.*—Now, Dr. Scandiffio, you have studied those records, have you not? *A.*—I have.

*Q.*—Pursuant to my request? *A.*—Yes.

*Q.*—And I speak specifically of the records of Dr. Price? *A.*—Yes.

*Q.*—Will you tell us what was the largest number of patients seen by Dr. Price as shown by these records on any day during the period you have there, 1938? *A.*—That ordinarily would be a difficult question to answer if you word the question of patients "seen"; patients listed in the record, the maximum number was 51.

*Q.*—That is, according to those records you have? *A.*—That is correct.

*Q.*—Will you tell us what the next highest number was according to those records? *A.*—The next highest number grades down to 34; there are exactly seventeen days out of the entire year of 1938 when Dr. Price saw more than 34 patients a day; that is, had thirty-four names of patients listed on his daily record.

*Q.*—And outside of eighteen days then during that period Dr. Price saw them less than 34 patients daily? *A.*—Yes.

*Q.*—Have you computed from the records you have concerning Dr. Price's treatments the average number of patients seen by Dr. Price each day? *A.*—Throughout the year?

*Q.*—For each month throughout the year? *A.*—I don't have the average monthly figure; I could give that to you in a very short time by going over my summaries.

*Q.*—Perhaps I didn't make my question clear: from the monthly summaries will you tell us what the average number is? *A.*—Yes, the average number of patients listed in Dr. Price's record for the entire year of 1938 was 18.

*Q.*—Eighteen? *A.*—Correct.

*Q.*—I believe you told us, Doctor, that each doctor during 1938 kept his own record of patients seen in a little book. *A.*—Yes.

*Q.*—Now, will you tell us what was included within the phrase, or the two words, "patients seen"? *A.*—The list of patients seen usually included, and did include, with the exception of Dr. Price, those patients seen in the office, home or hospital each day.

*Q.*—You say with the exception of Dr. Price: what do you mean? *A.*—I mean by that Dr. Price listed in his records telephonic consultations, the names of patients who accosted him in the hall for a moment or two—

*Mr. Leahy:*—Object: How would this patient know that?

*The Witness:*—I know it because I saw him enter in his list the names of those patients who received the services concerning which I am about to recite; also the injections which he gave the patients; also interpretations of x-ray plates; and also every fluoroscopic examination made by Dr. Price and, finally, all x-ray skin treatments usually performed under Dr. Price's supervision by Mrs. Davis, the x-ray technician.

*Q.*—Now, let us consider these matters which you say you know he entered. First, x-ray interpretation. How long would it take any doctor to interpret an x-ray?

*Mr. Leahy:*—Objected to, unless he is qualified to read x-rays.

*By Mr. Kelleher:*

*Q.*—Do you know, as a fact, how long Dr. Price took for x-ray interpretations? *A.*—Yes, Dr. Price took an average of one to two minutes for the ordinary chest and skeleton interpretation; an average of about five minutes for a gastrointestinal series and gallbladder series.

*Q.*—Doctor, are you familiar with and can you read x-rays, make x-ray interpretations? *A.*—I can't qualify as such.

*Q.*—Have you any experience in the interpretations of x-rays?

*A.*—Some: every physician has some experience in that work.

*Q.*—Would you say that from one to two minutes on a chest picture, and from five minutes, about five minutes on an abdominal picture was a sufficient time for a doctor to spend?

*Mr. Leahy:*—Objected to; he has just said he was not an expert.

THE COURT:—Sustained.

*By Mr. Kelleher:*

*Q.*—Doctor, how long did Dr. Price spend on skin treatments? *A.*—Not more than two minutes per patient.

*Q.*—What were those skin treatments; what did they consist of? *A.*—Simply administering x-ray dosages to particular areas of the skin affected by the disease. The work, the preparation was done by Mrs. Davis, the x-ray technician.

*Q.*—What were the duties of Dr. Price with reference to those treatments? *A.*—The actual time consumed by Dr. Price in administering the treatment would occupy just a fraction of a second.

*Q.*—Now, Dr. Scandiffio, will you tell us how long was spent in a fluoroscopic examination? *A.*—The average time spent on fluoroscopic examination wasn't more than five minutes; that includes the preparation of the patient. The actual examination was probably less than one minute.

*Q.*—And there again was the patient prepared by the nurse? *A.*—Mrs. Davis, yes.

*Q.*—And the doctor's duty was solely to make the examination? *A.*—That is correct.

*Q.*—Dr. Scandiffio, have you also produced the daily and monthly summaries of the doctors of G. H. A. during the period from Jan. 1, 1938 to March 1, 1938, when Dr. Brown was Medical Director?

THE COURT:—Just that period of time?

*Mr. Kelleher:*—Yes.

*The Witness:*—Yes, I have.

*By Mr. Kelleher:*

*Q.*—You have. What were the names of the doctors who were on the staff of G. H. A. during that period? *A.*—Dr. Selders; Dr. Brown; Dr. Hulburt; Dr. Price and myself. I should judge that there were one or two other part-time physicians.

*Q.*—Dr. Richardson? *A.*—Yes, I believe he was the only one at that time.

*Q.*—Taking the records of Dr. Selders, Dr. Hulburt and Dr. Price, and yourself: will you tell us what the monthly averages were for Dr. Selders? *A.*—I can give you monthly totals for Dr. Selders, but not the monthly averages unless I stopped to compute them.

*Q.*—Give us the monthly totals first for Dr. Selders. *A.*—Dr. Selders was 533.

*Q.*—That was the month of January? *A.*—Yes.

*Q.*—In February? *A.*—He saw 481.

*Q.*—What is the daily average? *A.*—Daily average for the two months was 20 a day.

*Q.*—Take Dr. Hulburt. *A.*—He in January 1938 saw 644 patients and in February 428. His average for the day was 22.

*Q.*—Now, Dr. Price. *A.*—Dr. Price, in January 1938 saw 333 patients, and in February 375. His average 15 a day.

*Q.*—Was there any time, Doctor, during those two months when any doctor in the clinic treated as many as 60 patients a day? *A.*—No.

*Q.*—Dr. Scandiffio, were these daily and monthly summaries of patients seen by the various doctors in the clinic kept for November and December 1937? *A.*—They were kept, but we have only the total summary of patients seen by doctors from Nov. 1, 1937 to June 1, 1938. We do not have the daily or monthly summaries for the individual months November and December 1937.

*Q.*—Yes. You have told us, Dr. Scandiffio, that you were engaged in private practice from 1929, I believe you said, until 1937. Is that correct? *A.*—That is correct: 1931, I am sorry.

*Q.*—1931 to 1937? *A.*—Yes.

*Q.*—Will you tell us whether there is any difference in the personal relationship between the doctor and patient in private practice and in a group such as G. H. A.?

*Mr. Leahy:*—I object.

THE COURT:—I don't know what he has relation to.

*Mr. Kelleher:*—I have relation to Dr. Brown's testimony.

*Mr. Leahy:*—What did he say?

*Mr. Kelleher:*—He testified that it was impossible for doctors to maintain the proper relationship with their patients when they had to deal with so many.

*Mr. Leahy:*—That had nothing to do with the question you put.

THE COURT:—I don't see that a comparison would be the proper way to approach it. If you can show the actual circumstances with reference to G. H. A. and generally with reference to private practice I will permit that.

*By Mr. Kelleher:*

*Q.*—Will you tell us from your experience with G. H. A. whether you were able to maintain the proper relationship between you and your patients?

*Mr. Leahy:*—I object to the question: that is not what his Honor suggested. It is not rebuttal.

*Mr. Lewin:*—I submit it is.

THE COURT:—I think Dr. Brown brought out the fact that the method pursued by G. H. A. presented difficulties in the way of a patient continuing with one doctor after having seen another. I think there is something to that effect, is that correct? I will permit you to offer evidence on that, if you wish.

*Mr. Kelleher:*—I will go to something else and probably come back to this.

*By Mr. Kelleher:*

*Q.*—Dr. Scandiffio, while you were with G. H. A. during the period from November 1937 until Dec. 20, 1938 in your view, did Group Health Association supply its members adequate medical care? *A.*—Most certainly; it was much more medical care—

*Mr. Leahy:*—Objected to. The question has been answered.

THE COURT:—He has answered the question.

*By Mr. Kelleher:*

*Q.*—What is the reason for your answer? *A.*—The reasons are that we could give the patient better and more adequate medical care than we could as private practitioners.

CROSS EXAMINATION

*By Mr. Leahy:*

(The witness listed the various physicians employed in 1937 and 1938.)

*By Mr. Leahy:*

*Q.*—In that period to which your attention was called, Nov. 1, 1937 to May 1, 1938, it treated 19,130 patients? *A.*—Who treated?

*Q.*—G. H. A. *A.*—I wish you would make your question more definite.

*Q.*—Doesn't it show that the number of patients in the clinic was 19,130 in that period of time? *A.*—I wish to qualify it now, if I may—

THE COURT:—Just answer the question.

*The Witness.*—Yes. The answer is yes.

*Q.*—Now, what is your explanation? *A.*—The 19,000 and some odd included medical care, surgical, eye, nose and throat, pediatrics, obstetrics, and also laboratory tests; physiotherapy treatments, basal metabolism, electric treatments, cardiographs, x-rays and fluoroscopic examinations.

*Q.*—Well, it shows that; it is broken down here, isn't that true? *A.*—Yes.

*Q.*—You treated 6,218 medical cases? *A.*—Yes.

*Q.*—Two thousand four hundred and forty-three surgical cases, is that right. *A.*—Yes.

*Q.*—Two thousand seven hundred and seventy eye, nose and throat? *A.*—Yes.

*Q.*—Two thousand one hundred and seventy-nine pediatrics? *A.*—Yes.

*Q.*—And 94 obstetrics? *A.*—Yes.

*Q.*—And in that time you had medical, surgical and obstetric cases in the hospital in number 58? *A.*—Yes.

*Q.*—You made one thousand three hundred and eight home calls? *A.*—Yes.

*Q.*—And two hundred and fifteen hospital calls; is that right? *A.*—Yes.

*Q.*—And you referred 248 cases to consultants? *A.*—Yes.

*Q.*—Physiotherapy you had 3,464? *A.*—Yes.

*Q.*—Ultraviolet treatments, 1,735? *A.*—Yes.

*Q.*—Short wave treatments? *A.*—One thousand seven hundred and twenty-nine.

*Q.*—Basal metabolism, 330? *A.*—Yes.

*Q.*—Electrocardiographs? *A.*—Sixty-six.

*Q.*—X-ray? *A.*—Eight hundred and twenty-two.

*Q.*—Fluoroscopic examinations? *A.*—Four hundred and seventy-three.

*Q.*—Prescriptions? *A.*—Five thousand eight hundred and sixty-four.

*Q.*—Laboratory; clinical laboratory reports? *A.*—Five thousand five hundred and twenty-eight.

*Q.*—Eye refractions by Dr. Haller? *A.*—Four hundred and twenty-two.

*Q.*—Eye, ear, nose and throat in clinic? *A.*—Sixteen.

*Q.*—You treated 9,278 members and 9,013 dependents, is that correct? *A.*—Yes.

*Q.*—Now, you averaged for us the amount of time which was spent on the various examinations. I made some notes; I want to be sure that I have your testimony correctly. On a general chest interpretation of an x-ray plate you spent one to two minutes, is that right? *A.*—That is correct. May I qualify that answer?

*Q.*—Yes. *A.*—I should like to state that many of our chest x-rays were simply routine procedures, not for the detection of any pathology. If a chest plate showed any pathology, the average time spent in interpreting that plate would be considerably more.

*Q.*—Well, how much more, do you know? *A.*—Yes, I should say the average interpretation of a pathologic x-ray plate should take at least five minutes.

*Q.*—Can you detect a pathologic condition in a chest in one or two minutes? *A.*—You can detect the fact that there is pathology within a minute.

*Q.*—And can you then interpret an x-ray plate of pathologic condition in the chest in one or two minutes? *A.*—In some you may; in others you should take longer.

*Q.*—You have taken these times which were required to make interpretations of x-rays of chests; x-rays of gastrointestinal tracts, from the records, haven't you? *A.*—No, sir.

*Q.*—You didn't stand by and see each x-ray taken, did you? *A.*—I saw many.

*Q.*—Did you see Dr. Price and notice how long he spent on each x-ray? *A.*—No, not every one; I watched him make the examination and watched him interpret the plate.

*Q.*—But, you have given the time which Dr. Price spent on these interpretations from an inspection of the records, which you have; isn't that true? *A.*—Oh, no.

*Q.*—Will you state it as a fact that Dr. Price spent only one to two minutes on chests? *A.*—On the average routine chest x-rays, yes.

*Q.*—How many were average routine chest x-rays? *A.*—It would simply be a guess; I should say about 90 per cent.

*Q.*—What would be the routine of taking x-ray chest pictures? *A.*—The routine would simply be to make out the requisition for an x-ray of the chest, and then the appointment for the patient would be made for the x-ray.

*Q.*—You didn't x-ray the chest of each patient? *A.*—No.

*Q.*—You only x-rayed the chests of those you thought should have x-rays. *A.*—That is what I tried to bring out. Many were routine x-rays; simply on the basis of requests of patients, or as a preventive measure.

*Q.*—If a patient requested an x-ray you gave him one? *A.*—In most cases, yes.

*Q.*—If you thought he should have an x-ray of his chest you did that? *A.*—Yes.

*Q.*—There wasn't any routine in giving x-ray examinations of all patients? *A.*—No.

*Q.*—And that is true of gastrointestinal tracts also? *A.*—Yes.

*Q.*—You wouldn't take an x-ray of an abdomen unless there was some reason for it, in your judgment? *A.*—No.

*Q.*—Or unless the patient thought there was some reason for it? *A.*—Correct.

*Q.*—And you say he would spend how long on his interpretation of a gastrointestinal tract x-ray? *A.*—I would say on an average of about five minutes where no pathology was evident.

*Q.*—Is there anything in the record to indicate as to what time he spent? *A.*—No, there is not.

*Q.*—Then your testimony is that in cases where you saw Dr. Price interpreting such x-rays he would take a minute or two minutes in ordinary cases; and in the case of a gastrointestinal x-ray he would take four to five minutes, you say that is correct? *A.*—That is correct.

*Q.*—How many cases do you think you saw Dr. Price interpret a day? *A.*—I should say roughly—I will have to put that on a weekly basis—I would say about ten a week.

*Q.*—Ten a week? *A.*—Yes.

*Q.*—And why do you base it on a week instead of a day? *A.*—Because I couldn't give an average daily; a daily average, I mean, because I wasn't with Dr. Price every day; didn't have time.

*Q.*—Then your testimony to be accurate is that each week you saw Dr. Price give at least ten x-ray interpretations? *A.*—Yes.

*Q.*—Now, who did the fluoroscopic examinations? *A.*—Dr. Price.

*Q.*—How long did you say he spent on a fluoroscopic examination? *A.*—The actual time spent on a fluoroscopic examination was just a matter of seconds; a minute or two at most. You cannot expose the patient too long.

*Q.*—You are referring now to an examination on a fluoroscopic table? *A.*—Usually upright.

*Q.*—And any examination which you saw Dr. Price make would take only a minute? *A.*—Roughly about that.

*Q.*—What were those examinations being made for when you saw them? *A.*—Many of them for checking of physical findings; many of them to determine whether there was any pathology in the chest; that is in the heart or lungs.

*Q.*—How many of those would you say Dr. Price made in a week? *A.*—I didn't attend many of those; I couldn't give you a weekly average of those.

*Q.*—Did Dr. Price also attend patients outside the clinic; house calls? *A.*—You mean Group Health patients?

*Q.*—Yes. *A.*—Yes.

*Q.*—How many house calls would he make a day? *A.*—I don't think you could break it down to daily average. If broken down it would be very small; I should say roughly about one or two a day.

*Q.*—Who else made the calls on patients who were sick at home? *A.*—All of our doctors; all of those listed in that summary.

*Q.*—Have you any breakdown there of the monthly home calls made? *A.*—I have not. I have the total, as you know, of the period Feb. 1, 1937 to August 31, 1937—one thousand three hundred and eight home calls.

*Mr. Lewin:*—That is the seven month period?

*The Witness:*—Yes.

*By Mr. Leahy:*

*Q.*—How many doctors were making that number of calls in that period? *A.*—Seven.

*Q.*—That included the District of Columbia, adjacent territory in Virginia, and also Maryland? *A.*—That is correct.

*Q.*—And the clinic, the hours of the clinic, were from? *A.*—From 9 to 6; 9 to 1 on Saturdays.

*Q.*—When was it Dr. Price resigned, do you recall?

*Mr. Lewin:*—Objected to as being beyond the indictment period.

*By Mr. Leahy:*

*Q.*—Do you recall? *A.*—Yes.

*Mr. Lewin:*—May the question be asked: Was he still there at the time of the indictment?

THE COURT:—He may answer that question.

*The Witness:*—Dr. Price was still with us at the time of the indictment. Is that the information you want?

*By Mr. Leahy:*

*Q.*—When did he resign? *A.*—In January 1939, to the best of my recollection.

*Q.*—Do you have the records made by Dr. Price with you? *A.*—What records are you referring to?

*Q.*—You said he marked down in a little book everybody he saw; talked to? *A.*—No, I don't have those records.

*Q.*—Where are they? *A.*—I don't know; I believe he took them with him.

*Q.*—Now, how do you know Dr. Price's book contains the records you state it contains? *A.*—Because these are copies from the doctor's book.

*Q.*—Did you ever test the copy that you have with Dr. Price's book? *A.*—I personally did not because I wasn't responsible for these records at that time.

*Q.*—Do you know of anybody who has transferred from Dr. Price's record book the number of patients he saw there in the clinic? *A.*—Yes, I do.

*Q.*—Where are those records? *A.*—Those are the ones that I have.

*Q.*—Did you ever see anybody transfer them from Dr. Price's book? *A.*—I have from time to time seen the process done, yes.

*Q.*—Did you ever examine Dr. Price's book yourself? *A.*—No.

*Q.*—Never did? *A.*—No, I had no occasion to.

*Q.*—Do you know now whether he saw only the number of patients which he had on the records you testified from? *A.*—I wish you would repeat that question.

*Q.*—I said, do you know now that the only patients who Dr. Price saw were those shown on the records to which you testified? *A.*—No, I don't know that. I mean by that this: I do know that the patients, the names listed and the numbers listed are the exact copies of his own records. I do know it, that the names listed do not agree with the number of patients seen by him.

*Q.*—You mean that he saw more patients than are listed on the records? *A.*—He saw less patients than are listed on his records.

*Q.*—You mean that the records he made show as patients seen people in fact he did not see? *A.*—That is correct. I testified that he included telephonic conversations, casual meetings in the hall with patients, injections—not injections—x-ray interpretations were listed as patients seen when they were not seen.

*Q.*—Is there any record now to which you can draw our attention which is an original record made by Dr. Price? *A.*—Yes, not in our possession, however; it must be in his possession.

*Q.*—Did you answer also that all throughout this period which you have inquired about that you believed G. H. A. was supplying adequate medical care to patients? *A.*—I did.

*Q.*—And that you felt throughout this period that you could give better care to patients than you could in private practice? *A.*—Undoubtedly.

*Q.*—Do you recall talking with Dr. Wall and Dr. Macatee in the early fall of 1938? *A.*—I do.

*Q.*—You knew Dr. Wall very well, did you not? *A.*—I think I did.

*Q.*—You served with him for a good while before you joined G. H. A.? *A.*—Yes.

*Q.*—He was your preceptor, so to speak, was he not? *A.*—In a manner of speaking, yes.

*Q.*—Did you and Dr. Price and Dr. Selders go to Dr. Wall and Dr. Macatee and offer to resign in a body from G. H. A. at this very time that you are talking about, because you couldn't give adequate medical care to patients? *A.*—No.

*Q.*—Did you and Dr. Price and Dr. Selders go to Dr. Wall's home and there talk with Dr. Wall? *A.*—We did.

*Q.*—Did you all three offer to resign from the staff of G. H. A.? *A.*—We did not offer to resign.

*Q.*—Did you say that the three of you wanted to resign? *A.*—I will say that we discussed the resignation of us from G. H. A.

*Q.*—At the same time you thought all the others on the staff of G. H. A. would resign also? *A.*—No.

*Q.*—And then did you ask Dr. Wall and Dr. Macatee to help you? *A.*—No.

*Q.*—Did any one say anything about what would happen if you all resigned at once? *A.*—I did not.

*Q.*—And did you then say to Dr. Wall and Dr. Macatee that would break up G. H. A. if you all resigned in a body? *A.*—I said it might break up G. H. A. if we all resigned.

*Q.*—And didn't Dr. Wall and Dr. Macatee say, "No," they couldn't do anything for you? *A.*—I don't recall that, because there was no occasion for it; no questions were asked to get an answer like that.

RE-DIRECT EXAMINATION

*By Mr. Kelleher:*

*Q.*—Tell us the complete conversation at that meeting. *A.*—This occurred in the fall of 1938, at a time when Dr. Selders brought to the attention of the staff certain—

*Mr. Leahy:*—I object to anything like that; just tell the conversation.

*The Witness:*—The conversation of what?

*By Mr. Kelleher:*

*Q.*—With Dr. Macatee and Dr. Wall. *A.*—Dr. Wall and Dr. Macatee were seen by Dr. Selders, Dr. Price, and myself at Dr. Selders' request to me—Dr. Selders being thoroughly dissatisfied with his position asked me to arrange—

*By the Court:*

*Q.*—What was said? *A.*—I thought that would include it.

THE COURT:—I want you to confine yourself to the question and answer it.

*The Witness:*—We discussed exactly what Mr. Leahy has brought out in my testimony. We asked Dr. Wall to meet

with the three of us and at the time of the meeting Dr. Selders and Dr. Price asked certain questions of Dr. Wall and Dr. Macatee particularly regarding the Medical Society privileges and hospital privileges. The question of resignations was brought up; that is the question of our resigning from Group Health staff was brought up at the time and discussed.

*Q.*—By whom? *A.*—By all of us.

*Q.*—And in connection with the hospital privileges and membership in this Medical Society? *A.*—No, not in that connection. We simply—the question of hospital privileges and of medical society privileges was brought up by Dr. Selders and Dr. Price, Dr. Selders particularly because he was a surgeon and—

*Mr. Leahy:*—I object.

THE COURT:—Yes. Sustained.

TESTIMONY OF MRS. CAROLINE REECE EPPERLEY

The witness identified some documents.

TESTIMONY OF E. M. ROGERS

As superintendent of Casualty Hospital, she identified some documents.

TESTIMONY OF EDNA TREASURE

As the superintendent of the National Homeopathic Hospital she identified documents.

TESTIMONY OF RAYMOND R. ZIMMERMAN

DIRECT EXAMINATION

*By Mr. Lewin:*

*Q.*—Do you recall a meeting at a dinner on the evening of June 24, 1937, between you, Mr. Penniman, and Dr. Henry Rolfe Brown? *A.*—I think so; that was at a dinner meeting at the Mayflower Hotel, prior to going over to the District Medical Society.

*Q.*—Now, Dr. Brown testified here, page—

*Mr. Leahy:*—Just ask a question. You don't have to characterize Dr. Brown's testimony.

*Mr. Lewin:*—I am going to ask him about the testimony.

THE COURT:—Put the question.

*By Mr. Lewin:*

*Q.*—Did you at that meeting tell Dr. Brown in connection with the anticipated meeting at the District Medical Building to tell them—meaning the doctors of the District Medical Society, or its executive committee—as little as possible? *A.*—Nothing of the sort. That was not the spirit of the meeting.

*Q.*—Did you hear Mr. Penniman make that statement? *A.*—Do I understand the question to be: you are asking me if I instructed Dr. Brown to say as little as possible to the doctors over there?

*Q.*—Yes, I asked that question. *A.*—There was no such instruction given at all.

*Q.*—Did you say to Mr. Penniman to say as little as possible? *A.*—No.

*Q.*—Any words to that effect? *A.*—On the contrary we said—

*Mr. Leahy:*—I object.

THE COURT:—Sustained.

*By Mr. Lewin:*

*Q.*—What did you say?

*Mr. Leahy:*—I object.

*Mr. Lewin:*—Dr. Brown went into this.

THE COURT:—He didn't go into everything that was said. Dr. Brown said that Mr. Zimmerman made some specific statement, as I understood it. Mr. Zimmerman has denied it; that ends it.

*By Mr. Lewin:*

*Q.*—Did you three gentlemen go to the District Medical Building following that dinner meeting? *A.*—Yes.

*Q.*—And in the lobby did you say to Dr. Brown, Penniman, or either of them: "Now, don't forget; we will give them just as little as possible," or words to that effect, meaning by them the doctors of the Executive Committee of the District Medical Society. *A.*—I made no such statement at all. We looked on this as an opportunity—

THE COURT:—Just a minute: please answer the question.

*By Mr. Lewin:*

*Q.*—Now, you attended that meeting at the District Medical Society Executive Committee on June 24? *A.*—Yes.

*Q.*—Was any advice of the character I have called your attention to followed up at that meeting by your conduct: in other words, at that meeting did you tell them as little as possible: did you tell them as little as possible? *A.*—We gave them a full statement of the purposes of Group Health.

THE COURT:—Just a moment. I have to take some control of this situation. There is no foundation for that. If it was objected to, I would have sustained the objection.

*Mr. Lewin:*—May I approach the bench?

THE COURT:—Yes.

(Thereon Mr. Lewin approached the bench and handed the Court a transcript of the testimony, indicating certain portions thereof.)

THE COURT:—Yes, I am sorry; I was mistaken. Dr. Brown was asked about that. What you want to ask is whether any such arrangement was followed at that meeting?

*By Mr. Lewin:*

*Q.*—Yes. *A.*—We gave them full and complete information. At the conclusion of the meeting they thanked us for—

THE COURT:—You answered the definite question; that was sufficient.

*The Witness:*—We gave them full information; nothing withheld.

*By Mr. Lewin:*

*Q.*—Do you ever recall discussing the qualifications of Dr. Raymond E. Selders as a surgeon with Dr. Henry Rolfe Brown in the fall of 1937?

*Mr. Leahy:*—Objected to. Immaterial; no foundation laid.

THE COURT:—I don't recall that: sustained.

*By Mr. Lewin:*

*Q.*—Did you give any instructions to Dr. Henry Rolfe Brown that he was to leave the approach to the hospitals for Group Health alone? *A.*—That is for him not to deal with the hospitals?

*Q.*—Yes. *A.*—Never at any time.

*Q.*—Did you ever hear any one in connection with the management of Group Health Association give such instructions to Dr. Brown? *A.*—Never did.

*Q.*—Did you ever give such instructions to Dr. Brown that he should send you or send the president of Group Health mail received from the hospitals addressed to him unopened? *A.*—Never heard anything of the sort.

*Q.*—Did you do anything or say anything which would be calculated to lead Dr. Brown into thinking that you desired not a medical director but a rubber stamp?

*Mr. Leahy:*—Objected to.

THE COURT:—Sustained. That was a mere characterization by Dr. Brown. I think you might ask him whether or not Dr. Brown's authority was limited to doing what he was directed to do by lay officers of the Board.

*By Mr. Lewin:*

*Q.*—Was Dr. Brown's authority limited to doing what he was specifically directed to do by lay members of the Board? *A.*—Well, as far as I know he was never restricted. I certainly never did anything to restrict him.

*Q.*—Do you know of anything having been done to restrict him? *A.*—Never heard anything of it.

(The witness left the stand.)

TESTIMONY OF WILLIAM F. PENNIMAN

DIRECT EXAMINATION

*By Mr. Lewin:*

*Q.*—Mr. Penniman, you are Mr. William F. Penniman; and you have been on the witness stand heretofore in this case? *A.*—Yes.

*Q.*—You were the first president of Group Health Association? *A.*—Yes.

*Q.*—And I believe held that office until January 1938? *A.*—Yes.

*Q.*—Do you recall a meeting at the Mayflower Hotel on the evening of June 24, 1937 between yourself, Mr. Zimmerman and Dr. Brown? *A.*—I do.

*Q.*—Did you tell Dr. Brown on that occasion that in connection with the forthcoming meeting of the District Medical Society Executive Committee he should tell them as little as possible about the plans of Group Health Association? *A.*—No, sir, I never made any remark like that at all.

*Q.*—Did you hear Mr. Zimmerman make any such remark on that occasion? *A.*—No.

*Q.*—Did you go with Dr. Brown and Mr. Zimmerman to the Medical Society Building? *A.*—I did.

*Q.*—Out in the lobby did you say to Dr. Brown or Mr. Zimmerman: "Now, don't forget, we will give them just as little information as possible," or words to that effect, meaning by them the doctors who were going to be present when you interviewed them that night? *A.*—I did not.

*Q.*—Did you hear Mr. Zimmerman make any such statement? *A.*—No.

*Q.*—Now, as a matter of fact, when you entered the meeting, did you carry out any course of conduct designed to give the doctors with whom you were talking as little as possible of information regarding Group Health Association? *A.*—On the contrary—

THE COURT:—I think you may just answer yes or no.

*The Witness:*—We did not follow any such course as that.

*By Mr. Lewin:*

*Q.*—Do you remember how long the conference lasted?

*Mr. Leahy:*—It's been testified it was two hours.

*By Mr. Lewin:*

*Q.*—I would like to refresh his recollection. Did you first make a statement at that meeting that you would be glad to answer any questions?

THE COURT:—He has been all over that.

*Mr. Leahy:*—He has read the whole transcript two or three times.

*Mr. Lewin:*—There are three portions of it that I would like to read.

THE COURT:—I am not going to permit any repetition. I think that has all been gone into.

*By Mr. Lewin:*

*Q.*—You had occasion to glance at the minutes of the meeting taken by the District Medical Society doctors themselves? *A.*—That is right.

*Q.*—And would you say they rather faithfully recorded what was transpiring there?

*Mr. Leahy:*—Objected to as calling for a characterization; they speak for themselves.

*By Mr. Lewin:*

*Q.*—Yes. Now, on whose recommendation was Dr. Selders admitted to the staff of Group Health Association? *A.*—The Medical Director, Dr. Brown.

*Q.*—Did you receive a report from Dr. Brown dated Oct. 1, 1937 on the personnel of the staff chosen up to that time? I show you Exhibit 671. *A.*—Yes.

*Q.*—Is this the report you received from Dr. Brown? *A.*—Yes.

*Q.*—Attached to it, is it not, on the third page, is the record of the experience of Dr. Selders and certain remarks about his qualifications from Dr. Brown? *A.*—That is right.

*Q.*—I should like now to offer that in evidence, if I may, the first three pages of his report.

THE COURT:—Have you seen it, Mr. Leahy?

*Mr. Leahy:*—No, I have not, your Honor.

*By Mr. Lewin:*

*Q.*—Did you as president of Group Health Association ever limit Dr. Brown's activities? *A.*—You mean medical or otherwise?

*Q.*—Medical. *A.*—No, at no time.

*Q.*—Did you exclude him from making approaches to the hospitals on behalf of the staff of Group Health Association? *A.*—No.

*Q.*—It is in evidence that you wrote a number of letters to the hospitals in November 1937 and following that: Will you state the circumstances under which you rather than Dr. Brown wrote those letters?

*Mr. Leahy:*—Objected to.

THE COURT:—Sustained.

*Mr. Lewin:*—Can I show your Honor the testimony?

THE COURT:—I don't think it is necessary.

*By Mr. Lewin:*

*Q.*—Did you ever give Dr. Brown any instructions that he should send over to you unopened mail which he might receive from the hospitals? *A.*—I did not.

*Q.*—Was anything in substance to that effect done at any time? *A.*—No, at no time.

*Q.*—Did you keep Dr. Brown informed about your correspondence with the hospitals? *A.*—Continually and constantly.

*Q.*—Did you inform him of the November letter and of its contents?

*Mr. Leahy:*—Objected to.

THE COURT:—I think that is going beyond proper limits.

*Mr. Lewin:*—I wonder if I might ask him whether he brought the letters from the hospitals to the attention of Dr. Brown.

THE COURT:—I think he might answer that.

*By Mr. Lewin:*

*Q.*—Did you bring to Dr. Brown's attention currently the answers which you received from time to time from the hospitals? *A.*—I did; I kept him constantly informed.

*Q.*—Did you ever receive any objection from Dr. Brown?

*Mr. Leahy:*—Objected to.

THE COURT:—Sustained.

*Mr. Lewin:*—I want to ask him about the rubber stamp episode.

THE COURT:—Put the question similarly to the one I indicated. How long do you expect to take, Mr. Lewin?

*Mr. Lewin:*—I think I can complete this in five minutes.

THE COURT:—Well, I think we will adjourn until 1:30.

## MARCH 31—AFTER RECESS

### TESTIMONY OF WILLIAM F. PENNIMAN

#### FURTHER DIRECT EXAMINATION

*By Mr. Lewin:*

Mr. Penniman identified applications by Dr. Selders which he sent to the hospitals.

#### LETTER OF DR. MATTINGLY

The Court admitted a letter, Nov. 27, 1937, Sibley Memorial Hospital to Dr. Mattingly and reply dated Dec. 25, 1937.

*Mr. Leahy:*—Ladies and gentlemen, I wish to read a communication from Sibley Memorial Hospital, dated Nov. 27, 1937:

"Dear Doctor:

"Dr. Raymond Everett Selders has requested the privilege of treating the following in Sibley Memorial Hospital:

"Medicine
Minor and Major Surgery & Abnormal Obstetrics
Minor & Major Gynecology.

"As a member of the Advisory Committee on Medicine will you kindly indicate your approval or disapproval at the bottom of this letter and return it to the office of the President of the Hospital before Tuesday.

"Very sincerely yours,
"R. Lee Spire, M.D.
"Chairman.

"Applicant's credentials on file in the office of the President.

"Attention of the Committee is called to the fact that above applicant is one of the salaried physicians of the Home Owner's Loan Corporation Group Health Association and that information as to his qualifications and correspondence in connection with his application will be found on file in the president's office available to members of the various committees concerned for their information.

"Disapproved.
"Thomas E. Mattingly, M.D.
"Explanation appended.

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Dec. 25, 1937.

"Dr. Lewis H. Taylor,
Sibley Memorial Hospital,
Washington, D. C.

"My Dear Dr. Taylor:

"As a member of the Medical Council, I have been asked to indicate my approval or disapproval of the application of Dr. Raymond Everett Selders for the privilege of practicing 'Medicine' in Sibley Memorial Hospital. Ordinarily I would regard it presumption to disapprove a candidate because in his application he requested hospital privileges, other than those it is my jurisdiction to pass upon. Yet in this particular case, I cannot ignore the fact that this applicant, just ten years out of medical school, has requested, and has certified himself as eligible to receive such additional hospital privileges that, should they be granted, it will be the equivalent of the hospital board certifying him to prospective patients, as competent to practice without restraint or exception, all of the highly specialized branches of the Healing Arts, with the possible exception of psychiatry.

"Approval of this application, in its present form, would give to a stranger in our midst privileges and sanctions not accorded to any other physician of professional eminence, practicing in our hospitals or occupying major chairs in our two, white, grade A medical schools. This rather unprecedented application for extraordinary privileges comes strangely from one whose unsurpassed erudition has not as yet been recognized by honorary degrees bestowed by appreciative universities of learning or, stranger still, has not been admitted to membership in either the American College of Surgeons or the American College of Physicians.

"I did note with interest his alleged membership in our parent body, the American Medical Association, and logically assume that he subscribes to its ideals and is obedient to its regulation and discipline. If such be the case, he will readily appreciate its injunction, making it mandatory for responsible hospital executives and hospital trustees to protect their prospective patients from the preventable hazards incident to a desultory and indifferent exercise of their appointive powers, in passing upon the qualifications of members of the visiting staff. Whereas a moderate degree of leniency and compromise is excusable, relative to their approval of general practitioners, both the American Medical Association and the American College of Surgeons most emphatically insist that the credentials of those soliciting the privilege of practicing the specialties be thoroughly and conscientiously challenged. These credentials are challenged by responsible agencies of the organized medical profession despite the fact that the applicant may be already possessed of a mandate and authority from the state, in the form of a license, to do the very act or acts he petitions the hospital board to approve.

"In this particular case, this applicant, like myself, is already licensed by the state to practice each and every branch of the Healing Arts for which he requests hospital privileges. So far as the state, in this instance the Federal Government, is concerned, both the applicant and I have a legal right to practice medicine and surgery in all of its many branches,

yet it is generally conceded that hospitals would be criminally derelict in their duty if they allowed their visiting staff the comprehensive privileges sanctioned by the law. To protect the unsuspecting patient against incompetence, poor judgment, criminal negligence and rash experimentation, any or all of which might be legally defensible, the organized medical profession, acting through the appointive power of hospital boards and hospital executives, has forced high and exacting standards of internal discipline, professional competency and ethical liability upon all hospitals, without the dutiful observance of which no hospital may continue to operate with its seal of approval.

"To this end each and every applicant for hospital privileges, particularly in the specialties, must prove beyond any reasonable doubt their indubitable fitness to receive the same. This means not only certification of professional competency but those qualities of character commensurate with the extent of the authority so delegated. I can hardly conceive of our Medical Council being so derelict in its duty and responsibility to prospective patients as to admit by inference that one person can adequately qualify as internist, obstetrician, gynecologist, nose and throat specialist and general surgeon, clothing him with authority and permission to perform the most hazardous and difficult procedures of these specialties.

"It is not unreasonable to demand that the Medical Council of Sibley Memorial Hospital apply the same conscientious rules of procedure in granting these most extraordinary privileges to a stranger in our midst as were used in the case of those of us who have been under the Medical Council's direct observation for a far longer period than this applicant has been out of medical school.

"I personally shall continue to disapprove this applicant until he with some modesty and reasonableness makes up his mind whether he desires hospital privileges as a general practitioner, nose and throat specialist, obstetrician and gynecologist, or a general surgeon. Because this applicant has reduced his own request for hospital privileges to an absurdity by the unreasonable enormity of his demands, I heartily disapprove of it and petition the Executive Committee to reject it, in its entirety.

"Fraternally yours,
"Thomas E. Mattingly, M.D."

The Court refused to admit the applications made for Dr. Selders to the hospitals.

REPORT ON DR. SELDERS

*Mr. Lewin:*—Ladies and gentlemen of the jury, Exhibit 671 is a letter from Henry Rolfe Brown, Medical Director, to Mr. Penniman, President, Group Health Association, dated Oct. 1, 1937, to which is attached information regarding the staff of Group Health which had been obtained up to that time.

I am permitted to read to you the third page of the report, which relates to Dr. Raymond E. Selders. It gives his name, Raymond E. Selders; age, 44; nativity, born in Illinois; position, surgeon; salary, $4,800.

*Mr. Lewin* (reading):

"Salary, $4,800.
"Religion, Protestant.
"Marital Status. Married (No children).
"Licensed: Oklahoma, Texas; licensed in New York and Massachusetts by endorsement of National Board Credentials.
"Licensed District of Columbia.
"Degrees: B.A., University of Oklahoma, 1918.
B.S., Ch.E., University of Oklahoma, 1919.
B.S. in Medicine, University of Oklahoma, 1925.
M.D., University of Oklahoma, 1927.
M.Sc., University of Pennsylvania, 1937.
"Experience:
"July 1927 to July 1928: Interned, St. Joseph's Infirmary (two hundred and nine beds) Houston, Texas.
"July 1928 to October 1935: General Practice including surgery, Houston, Texas.
"October 1935 to June 14, 1936: Postgraduate work at Graduate School of Medicine, University of Pennsylvania, Philadelphia.
"1936-1937: Resident Surgeon, Worcester City Hospital (six hundred beds) Worcester, Massachusetts. Has performed about three hundred and thirty-eight operations which was a part of the clinical and postgraduate work taken by Dr. Selders for the purpose of securing the diploma and degree of Master in Surgery.
"Dr. Selders is an experienced surgeon and has been in practice for about seven years and is splendidly qualified by his experience as a general surgeon.
"Address: Home, 2445 15th Street N.W.
"Telephone: Adams 5302."

*Mr. Lewin:*—That concludes the case for the Government.

## EVIDENCE IN SURREBUTTAL ON BEHALF OF THE DEFENDANTS

### TESTIMONY OF HENRY ROLFE BROWN

DIRECT EXAMINATION

*By Mr. Leahy:*

*Q.*—I am showing you what has been just identified and read as U. S. 671. I am showing you the third page thereof. Would you look at that and see if you can identify it as anything which you wrote? *A.*—Yes, this was the letter of recommendation for Dr. Selders and the others for a position on the staff of the clinic of G. H. A. on I Street.

*Q.*—And referring to that portion of the third page which states:

"Dr. Selders is an experienced surgeon and has been in practice for about seven years and is splendidly qualified by his experience as a general surgeon,"

what did you mean? *A.*—I referred to his work in the clinic. We had no general outside work, of course, in hospitals, and Dr. Selders was to take care of the clinic and the minor surgery of the clinic.

### TESTIMONY OF EDWIN A. MERRITT

DIRECT EXAMINATION

*By Mr. Leahy:*

Edwin A. Merritt said he is a practicing physician in the District of Columbia, specializing in radiology.

*Q.*—And will you just tell us without going into detail what radiology is? *A.*—Radiology is the use of radium energy in the diagnosis and treatment of diseases, both x-ray and radium.

He graduated from the University of Nebraska in 1904. After seven years of country practice he went to Rush Medical College in Chicago for internal medicine. Then he took up x-ray in Council Bluffs, Iowa, in 1912.

*Q.*—Doctor, I want to ask you what length of time is required in order to make a diagnosis of a condition of the chest where an x-ray is taken of the chest.

*Mr. Lewin:*—Objected to.

THE COURT:—Overruled.

*The Witness:*—Well, there are two different procedures, as a matter of fact. One consists of taking x-ray films or plates of the chest and the subsequent reading of them. That involves one period of time. There is another medical examination which is used sometimes, or a fluoroscopic survey of the chest is made, and then a plate is made; that takes another. From the start we will say; we begin now and make a fluoroscopic examination of a person's chest. It would take about thirty minutes.

*By Mr. Leahy:*

*Q.*—If you had an x-ray taken of the chest, how long would it take to make the x-ray and interpret it? *A.*—We take the x-ray film: the matter of getting a person undressed takes the larger part of the time. The taking of the films is a matter of a few seconds; developing is ten minutes; drying thirty minutes; and reading, five minutes.

*Q.*—What is a fluoroscopic examination? *A.*—It is an examination of the patient before a fluorescent screen and it penetrates the patient's body and is reflected on a screen. It must be done in an absolutely dark room and the eyes must be perfectly accommodated to it.

*Q.*—How long does it take to make such an examination? *A.*—To begin, it would take a minimum of twenty-five to thirty minutes, because you have to allow twenty-five minutes for adjustment of the eyes for the dark room. That is an invariable rule; the actual examination consumes perhaps five minutes.

*Q.*—Is there any difference between the times required to interpret an x-ray of the gastrointestinal tract and chest? *A.*—Yes, it takes longer, of course; gastrointestinal is a longer procedure.

*Q.*—How long would you say? *A.*—As a matter of fact, a complete gastrointestinal involves a study of an individual over three successive days, and the reading of the film ten to fifteen minutes, reviewing the fluoroscopic evidence; the evidence secured in the three previous examinations; reviewing that evidence plus the films that are taken consumes perhaps ten minutes, maybe fifteen minutes.

*Q.*—Could the process be done in four or five minutes? *A.*—No, sir; it could not.

*Q.*—Could the x-ray plate on the chest be taken and interpreted in a minute? *A.*—In a minute?

*Q.*—Yes. *A.*—Not at all sir; no, sir.

*Q.*—Where pathology is indicated does it make any difference as to the time for the interpretation of the x-ray plate? *A.*—No—well, yes, in a way, where there is the presence of pathology, the presence of abnormality, it leads to additional study and it takes longer, because if conditions are obscure you might spend hours on an x-ray examination.

CROSS EXAMINATION

*By Mr. Kelleher:*

*Q.*—The interpretation of an x-ray plate is the study of the x-ray plate after the picture has been taken, is it not? *A.*—That is right.

*Q.*—And you say it takes five minutes for an x-ray of the chest, ordinarily? *A.*—I should say a fluoroscopic examination of the chest would consume five minutes, probably.

*Q.*—And of the gastrointestinal tract ten to fifteen minutes for the interpretation? *A.*—I suppose, on the average, fifteen minutes; yes, sir.

### TESTIMONY OF DR. JOSEPH S. WALL

#### DIRECT EXAMINATION

*By Mr. Leahy:*

Joseph S. Wall said he has been a practicing physician in the District of Columbia for forty-five years. He graduated from Georgetown University Medical School in 1897. Then he did postgraduate work in New York, the New York Post Graduate School, and postgraduate work in Oxford, England. He now devotes his work exclusively to pediatrics.

*Q.*—Doctor, do you know Dr. Scandiffio? *A.*—I do.

*Q.*—How long have you known him? *A.*—I cannot tell exactly, but I think for a period of eight or ten years.

*Q.*—At any time was he studying his profession or practicing it under your direction? *A.*—He was my associate at the Children's Hospital for a number of years, and also was associated with me in the teaching of pediatrics at Georgetown Medical School.

*Q.*—Do you recall, Doctor, some time in the early fall of 1938, a conversation between Drs. Selders, Price and Scandiffio at your office? *A.*—I do.

*Q.*—Do you recall the date of that conversation? *A.*—It was not in the fall. It occurred on the Wednesday after Christmas 1938. I cannot remember the date because I have no calendar for 1938.

*Q.*—Do you recall now, Doctor, how that conversation came about?

*Mr. Lewin:*—We object, because it is beyond the scope of the indictment. The time has not been fixed. It is evidently to contradict Dr. Scandiffio. The time was not fixed at the time when he was on the stand, and it now appears that the conversation took place after the indictment period.

*Mr. Leahy:*—It would not make any difference.

THE COURT:—Did you bring it out in your cross examination?

*Mr. Leahy:*—Yes, I did, your Honor.

THE COURT:—It was collateral, was it not?

*Mr. Leahy:*—No, your Honor; I don't think so. May I approach the bench and give your Honor my theory?

THE COURT:—Yes.

(Counsel for both sides approached the bench and conferred with the court in a low tone of voice.)

(Counsel resumed their places at the trial table.)

*By Mr. Leahy:*

*Q.*—Doctor, can you recall now who was present at the time this conversation occurred? *A.*—Dr. Scandiffio, Dr. Price, Dr. Selders, Dr. Macatee and myself.

*Q.*—Where did the conversation take place? *A.*—It took place in my office.

*Q.*—At whose request? *A.*—At the request of Dr. Scandiffio.

*Q.*—How arranged? *A.*—Dr. Scandiffio called me by telephone on December 23 and asked if he could talk with me about a matter which he could not discuss by telephone. I arranged an appointment at 9 o'clock in the morning, the day before Christmas, and he came in to see me. Shall I state what he told me?

*Q.*—Was he there on that occasion himself? *A.*—He was there alone on that occasion. He asked me to arrange a meeting with himself and other members of the Group Health Association and with one or more of my colleagues in the Medical Society. I went the next day to see Dr. Mallory, the president of the Society, and talked with him and we agreed upon Dr. Macatee as being one of the senior members of the Medical Society.

*Q.*—And then in pursuance of that conversation did a talk occur at which Dr. Scandiffio, Dr. Price and Dr. Selders were present? *A.*—It did. As the result of this meeting with him on that morning I arranged to meet him on the following Wednesday evening when those three doctors were present, and Dr. Macatee and myself.

*Q.*—Doctor, I want to ask you if, in substance, those three gentlemen did not tell you—

*Mr. Kelleher:*—That is leading, isn't it?

*Mr. Leahy:*—I will ask for the conversation if you want me to.

THE COURT:—If you would rather proceed to put the direct questions by way of impeachment—

*Mr. Leahy:*—I think I will limit it to what Dr. Scandiffio said, because I think that is within your Honor's ruling.

THE COURT:—The conversation was in the presence of Dr. Scandiffio and the three of them. There was one conversation participated in by several of them. So it is a little difficult to differentiate. But confine your questions to the questions put to Dr. Scandiffio.

*Mr. Leahy:*—I will try to do that, your Honor.

*By Mr. Leahy:*

*Q.*—Doctor, do you recall that in that conversation the doctors stated to you that they were so dissatisfied with the work which they had to do down at the clinic that they wanted to resign in a body? *A.*—Yes. That was the substance of the conversation at the conference. Dr. Scandiffio—

THE COURT:—Just answer the questions, Doctor. Was that the substance of it, the best you can recall?

*The Witness:*—Yes, sir.

*By Mr. Leahy:*

*Q.*—Then did those doctors ask you if you would try to do something for them so that they could have a living, or words in substance to that effect, if they resigned? *A.*—If they did resign they asked Dr. Macatee and myself if we thought they would be taken back into membership in the Medical Society, and, secondly, Dr. Selders asked if he could be accorded hospital privileges if he resigned from Group Health Association. Dr. Macatee and I replied—

*Mr. Lewin:*—We object to the reply.

*By Mr. Leahy:*

*Q.*—Then did they say that the other members of the staff of Group Health Association would probably resign in a body if they resigned? *A.*—They did.

*Q.*—And that that would probably result in breaking up G. H. A.? *A.*—They did.

#### CROSS EXAMINATION

*By Mr. Lewin:*

*Q.*—Doctor, are you a member of the District Medical Society? *A.*—Yes.

*Q.*—How long were you a member of the District Medical Society prior to the fall of 1937? *A.*—I think, about thirty-nine years. About two years ago I was put on the life membership basis because I had served forty years.

*Q.*—Have you ever been a member of its Executive Committee? *A.*—Yes.

*Q.*—Do you remember when? *A.*—It was in the three years following, I think, 1926. At that time I was president of the Society and upon retirement I served three years on the Executive Committee.

*Q.*—Did you ever have occasion to state to Dr. Woodward, a defendant in this case, that you had regretted that Dr. Scandiffio had gone into the camp of the enemy, together with five other members—meaning by "the camp of the enemy" joining Group Health Association? *A.*—I probably so stated; yes, because I did regret it.

*Q.*—You all called the Group Health Association the camp of the enemy and so regarded it? *A.*—If I so stated in the letter, I did.

*Q.*—Did you say on Nov. 1, 1937 "I feel that this group of physicians"—meaning the Group Health doctors—"will have visited upon them the displeasure of the medical profession in Washington and will probably become medical outcasts, so far as we are locally concerned"? *A.*—Yes, because that was my belief.

*Q.*—Did you also call the A. M. A.'s attention to Dr. Richard Cabot's address on the occasion of the opening of Group Health Association and suggest that some disciplinary proceedings be taken against him for that? *A.*—I did.

*Mr. Leahy:*—I object to that.

THE COURT:—Sustained. That goes further than my ruling.

*By Mr. Lewin:*

*Q.*—Did you also say to Dr. Woodward in that letter that "You," meaning the group of doctors in the Medical Society of the District of Columbia, "should certainly be grateful for the help which may be accorded us by the American Medical Association"? *A.*—I did.

*Mr. Leahy:*—I object, if your Honor please. It is beyond your Honor's ruling.

THE COURT:—That answer may stand.

TESTIMONY OF DR. HENRY C. MACATEE

DIRECT EXAMINATION

*By Mr. Leahy:*

*Q.*—Doctor, I want to direct your attention immediately to a conversation held in the fall of 1938 at the office of Dr. Wall at which Drs. Scandiffio, Price, Selders and you were present with Dr. Wall. Do you recall the occasion? *A.*—I do.

*Q.*—Were you present? *A.*—I was.

*Q.*—And the three doctors whom I have mentioned, Drs. Selders, Price and Scandiffio? *A.*—They were all present.

*Q.*—And a conversation was had there between the five of you? *A.*—There was.

*Q.*—I want to ask you, Doctor, if in substance this was said by the doctors who were there with you and Dr. Wall.

*Mr. Lewin:*—Objected to as being beyond the scope of the indictment.

THE COURT:—Objection overruled.

*By Mr. Leahy:*

*Q.*—That they were dissatisfied with the work which they were called on to do at the G. H. A. clinic and were prepared to resign in a body? Did they so state? *A.*—That is true.

*Q.*—Did they further state anything to the effect that if they resigned, probably the other members of the staff would likewise resign? *A.*—That was my understanding.

*Q.*—Did they further state to you that in the event they all resigned in this fashion it would probably break up G. H. A.? *A.*—That was my understanding.

*Q.*—And then did they ask you two gentlemen if you would try to do something for them in the shape of helping them out if they did resign and if the remaining members of the staff of G. H. A. resigned? *A.*—They did.

*Mr. Leahy:*—That is all.

*Mr. Lewin:*—No questions.

DEFENSE RESTS

THE COURT:—Members of the jury, you will be excused until Wednesday morning at 10 o'clock. Be here when court is opened, a few minutes early. In the meantime, be very careful to observe the admonition that I have given you before.

## PRAYERS AND MOTIONS

(At 2:45 o'clock p. m., court and counsel proceeded to the chambers of Associate Justice Proctor, where the following proceedings took place:)

THE COURT:—I am refusing the general prayer for a directed verdict.

*Mr. Burke:*—Are you going to hear us on any motions for a directed verdict?

THE COURT:—No.

*Mr. Burke:*—We are very anxious to present certain points to you.

THE COURT:—You can make the motion on the record and it will be denied.

*Mr. Richardson:*—I might just as well submit four other motions here, and possibly it would be better if I read them right into the record.

THE COURT:—Either that, or hand them to the reporter.

*Mr. Lewin:*—That is better.

(The four motions referred to and submitted by Mr. Richardson are as follows:)

MOTION TO STRIKE (BACKGROUND)

Now Come the above named defendants, jointly and severally, and move the Court to strike from the record and advise the jury not to consider any and all evidence submitted in the record relating or having reference to the so-called background of the conspiracy and consisting of evidence with respect to acts and deeds of the defendant American Medical Association, its officers and agents, occurring and transpiring outside of the District of Columbia and prior to Jan. 1, 1937, on the ground that such evidence and the whole thereof is incompetent, irrelevant, and immaterial to any of the issues in the above-entitled action.

Respectfully submitted.

MOTION TO STRIKE (HOSPITALS)

Now Come the above named defendants, jointly and severally, and move the Court to strike from the record and advise the jury not to consider any and all evidence submitted in the record relating or having reference to the so-called Washington hospitals for the purpose of proving that said hospitals were co-conspirators with the defendants herein upon the ground and for the reason that said evidence and the whole thereof is insufficient, as a matter of law, to make or constitute the said hospitals or any of them co-conspirators as charged by the Government and alleged in the indictment.

Respectfully submitted.

MOTION TO DIRECT VERDICT

Now Come the above named defendants, jointly and severally, and move the Court to direct and advise the jury to return a verdict of not guilty in the above-entitled proceeding upon the ground and for the reason that the record in said case, and the whole thereof, shows as a matter of law that Group Health Association, its officers, members and operations were, with reference to all matters shown in the record, unlawfully engaged in the practice of medicine in the District of Columbia in violation of the laws applicable thereto, and were not, and none of them, unlawfully subject to or affected by any alleged restraints as charged and identified in the indictment.

Respectfully submitted.

MOTION TO DIRECT VERDICT

Now Come the defendants, jointly and severally, and move the Court to direct and advise the jury to return a verdict of not guilty in the above-entitled proceeding as to all defendants, upon the ground and for the reason that the facts, acts, and circumstances, as shown by the evidence, and the entire record herein submitted does not establish or tend to establish any violation of Section 3 of the Sherman Act relating to trade or commerce, as set forth or defined in said Act.

Respectfully submitted.

THE COURT:—The first and second ones will be refused. The third is what we have been through before, and there is nothing new there. The fourth is also refused.

## DISCUSSION ON PRAYERS

(The prayers of the respective parties were submitted and are published with the action of the Court noted. In the discussion the Court indicated he would not read the prayers to The jury but would incorporate them in his instructions.)

For the general interest of the readers some of the points discussed are here noted:

The Court said: "I never call the attention of the jury to the failure of a defendant to take the stand unless the defense itself asks me to do so and to explain the rule that no presumption should be taken. I am afraid it would be an error to do it, just as much for me as for counsel, unless it is asked.

*Mr. Kelleher:*—This is as to the ones that took the stand.

THE COURT:—But it brings the others in, and the next prayer couples up with it.

*Mr. Richardson:*—It is an incorrect statement of the law, because there is no such thing as to "consider the temptation which arises under such circumstances to testify to a state of facts favorable to himself."

*Mr. Lewin:*—Oh, yes.

THE COURT:—They have the right to consider the vital interest they have in the outcome of the case. But I will refuse this prayer for the reasons I have stated. I think that what I shall say on that will be satisfactory.

. . . . . .

*Mr. Richardson:*—Of course, twenty-two cannot be so. That is, it cannot be so and keep the society in existence.

*Mr. Kelleher:*—It probably ought to be dissolved; if we get a verdict then maybe it will be.

*Mr. Leahy:*—The trouble is you are argumentative in your instructions. You cannot assemble points of evidence and throw them to the Court and ask the Court to argue it for you.

THE COURT:—Well, I think you are entitled in a colorless way to have the rule stated, without argument, that if they did in fact conspire to restrain, and they find that beyond a reasonable doubt, then the use of ethics and those other things as justification for it would afford no justification. That is very roughly stated, but that is what you mean.

*Mr. Lewin:*—That is it.

THE COURT:—I will revise it.

. . . . . .

THE COURT:—I instruct them very carefully that the indictment is no evidence and raises no presumption of guilt, but on the contrary there is a presumption of innocence.

*Mr. Lewin:*—We would like to get away from these good motives.

*Mr. Richardson:*—I don't blame you.

THE COURT:—You said this was not sufficient?

*Mr. Kelleher:*—Here is what we were after in this charge: that it makes no difference if they find that Group Health did in fact violate the principles of ethics or that the defendant believes that they did.

THE COURT:—Yes, I understand. Of course, I shall tell them that it is unquestionably the law they are not required to live up to the ethics of the American Medical Association. They are not required to have the ethics and standards of the Association. If they didn't have it, it would make no difference.

*Mr. Richardson:*—And if as a result of their not living up to the principles of ethics and they desired to associate with those who do, and are not accepted, they get what they deserved.

*Mr. Leahy:*—You can't make anybody consult with somebody else.

*Mr. Kelleher:*—If they refused to consult in order to drive G. H. A. out, it is illegal regardless of the reason. Even if they thought it was unethical.

THE COURT:—If they thought it was agreed that "we are going to rush G. H. A., put it out of business; and we are going to do it by enforcing our rules of ethics" against them, then, of course, you have a conspiracy.

*Mr. Richardson:*—But you cannot take the action that was directed against G. H. A. and prove backwards by inference how the thing started.

THE COURT:—No, I can't say to the jury you have to assume that they did these things. The first thing is to find out whether they had a conspiracy.

*Mr. Leahy:*—What you want the Court to say is the refusal to consult amounts to conspiracy.

*Mr. Lewin:*—Well, here is a concerted refusal.

*Mr. Kelleher:*—If it is a refusal to consult for the purposes charged in the indictment, it is illegal.

THE COURT:—I am underscoring here "if a conspiracy"; then "employment of ethics, et cetera, to restrain would not be a defense"; the violation of ethics by G. H. A.

*Mr. Lewin:*—Or the belief on the part of the defendants that G. H. A. had violated these ethics.

*Mr. Leahy:*—I would like your Honor also to state that these various pieces of evidence are not proof per se of conspiracy.

THE COURT:—I shall tell them that there was no legal obligation, legal ethical obligation on the part of any physician to consult with any other physician.

*Mr. Leahy:*—Therefore even though they find that the members of the society refused to consult with G. H. A., they must further find that that was done with intent to destroy it.

THE COURT:—You see, let us assume that these regulations against consulting, et cetera, are an unlawful agreement to restrain physicians in medical practice. That is not what you are charged with. We don't have to deal with that.

*Mr. Richardson:*—No, but you have this situation: Here is a group of people in a meeting. Oh, they are confederating; one says something; they are all conspirators because of the very fact they were in a meeting. You are dealing with a society.

THE COURT:—I know you are arguing the matter now, but as a matter of fact anything that brings alleged conspirators together is a thing that may be considered by the jury whether it is reasonable or not, and the thing, in view of the fact that they are members of the society, will be argued on the one side; and whether it is unreasonable and may be treated as the act of a conspirator, may be argued on the other. That is a matter for argument. I cannot say the fact that men got together, this is some evidence. I can't consider it one way or the other, and I don't want to.

. . . . . .

*(To be continued)*

# MEDICAL ECONOMIC ABSTRACTS

## MEDICAL SERVICE ADMINISTRATION OF NEW JERSEY

Before proceeding with the organization of any prepayment plan, the Medical Society of New Jersey made extensive preparation. New Jersey had been one of the most successful states in the operation of care for the indigent under the FERA and derived much valuable information concerning the provision of medical service through this experience. The state medical society had also participated thoroughly in the national study of "Medical Care in the United States—Demand and Supply" and prepared one of the most elaborate reports on the results of that study. As early as 1938 the Medical Society of New Jersey dedicated itself to three objectives:[1]

1. To make available to every man, woman and child in New Jersey adequate personal and sympathetic medical care, preventive and curative, at the lowest cost compatible with efficient service.
2. To preserve for all the people of New Jersey, regardless of income, the free choice of physicians among those licensed by the state to engage in the healing art.
3. To advance medical science, elevate professional standards, foster friendly relations between doctors and promote mutual understanding between the doctors and the public.

A voluntary health insurance fact finding committee was appointed in October 1938 and submitted a report to the meeting of the house of delegates in June 1939. This report contained the outlines of a proposed plan, which was then kept under continuous discussion and frequent revision for several months. The plan was finally incorporated on Oct. 27, 1939 as the Medical Service Administration of New Jersey. The administration is directed by a board of governors of eight members appointed by the board of trustees of the Medical Society of New Jersey. At least five of these are to be members of the medical society. Their terms are to be overlapped. The board of governors determines all policies, rules and regulations and appoints all administrative personnel, including a medical director and such assistant medical directors as are considered necessary.

An advisory committee in each county is composed of members appointed by the board of governors subject to the approval of the county medical society. All licensed physicians are entitled to become professional participants on application and agreement to abide by the rules and regulations.

Beneficiaries must reside in or be employed in the state of New Jersey. A single person or the head of a family must not receive an income of more than $1,600 annually, with an allowance for the first dependent of $400 and $200 for each additional dependent. If more than 65 years of age, a satisfactory physical examination is required. Married women are not accepted unless the husband is also included in the plan. Only persons within groups of not less than ten persons are admitted without physical examination.

The subscription rates have been fixed as follows:

| | |
|---|---|
| Subscribers | $1.50 per month |
| First dependent | 1.25 per month |
| Second dependent | 1.00 per month |
| Third dependent | .50 per month |
| Fourth dependents | .50 per month |
| Other dependents | No extra charge |

Service in the office, home and hospital is covered. Medical and surgical services are available immediately in case of accident, but elective surgery is not provided during the first year. Drugs, nursing care, surgical appliances and maternity care during the first contract year, except antepartum advice, are also not furnished. There are the usual exclusions of functional mental, nervous and venereal diseases, institutional tuberculosis, drug addictions and injuries covered by workmen's compensation.

The administration will pay to participating physicians for the necessary services rendered by them to beneficiaries such fees as are determined by the board of governors. The fees will be based on the charges which the board determines are usually and ordinarily made by physicians, in the certain locality involved, to patients of like responsibility and financial circumstances, for services identical with or similar to those rendered the beneficiary; and further, according to the amount of money available to the administration for the payment of physicians' fees. Payment for roentgen ray services will be limited to $15 annually per individual beneficiary.

The certificate of authority to operate was accepted on March 25, 1941. At the present time the Medical Service Administration is qualified to operate in thirteen counties and a number of others are preparing to qualify for the plan. The physicians have readily entered into the agreement to participate. In twenty-one counties with a total membership of the Medical Society of New Jersey of 3,767 there were on March 26 2,172 physicians who had signed agreements. No report has yet been issued on the number of beneficiaries who have entered into the plan.

1. Carrington, W. J.: Objectives and Administrative Policies of the Medical Society of New Jersey for 1938-1939, J. M. Soc. New Jersey **35**: 374 (June) 1938; The President's Annual Report, ibid. **36**: 257 (May) 1939.

## MEDICAL CARE IN NEW YORK STATE

In 1939 the New York legislature appointed a committee to "formulate a long range state health program." This committee has just issued its report.[1] There is a study of medical care in welfare districts and of various features of health care by hospitals and public institutions.

Various plans of voluntary insurance including "group practice" and prepayment plans of state medical societies are discussed. It is concluded that "Whatever may be done to fill the present gap, voluntary prepayment plans will still be needed. They are susceptible of certain expansion and ought to be developed—along sound lines and in a socially desirable direction."

The history of compulsory health insurance in the United States is followed with a discussion of systems in foreign countries, and the necessity for placing administrative responsibility in the medical profession is recognized. It is somewhat surprising to read as one of the "lessons from experience" that "restoration and improvement of health, originally a by-product of the plans, has become a major objective." No example of this trend is cited. Another lesson is that:

> Administration of compulsory sickness insurance has been severed from some of its worst original features by the development of professional supervision of professional services and by the attempts to create efficient large-size administrative units. . . .
>
> Experience has also shown that no human being has been able to present a formula which suits all.
>
> It would be indefensible indeed if any state in this country imported and repeated the mistakes made abroad. Foreign experience can clearly demonstrate stumbling blocks and shortcomings which must and can be avoided. From the oldest law, the German, we can learn how detrimental it is if the medical profession is kept out from active participation in administering sickness insurance.

In considering the "problems of compulsory health insurance with special reference to New York State" the report says:

> Compulsory health insurance has proved to be primarily feasible for industrialized areas with large and stable groups of employees working for salaries or wages, and a densely settled population. The problem in the rural areas is so loaded with difficulties that it would be a waste of effort to consider health insurance for residents of such areas as long as there is no established program in the industrial areas. In a state in which a substantial part of the population consists of independent farmers and persons employed in agriculture, support of compulsory health insurance by contributions would be insufficient, and considerable allocations from taxation would be needed.

Emphasis is laid on the "necessity for coordination of any proposals for compulsory health insurance with existing voluntary and public health and welfare activities." There are no specific recommendations for legislative action.

1. Medical Care in New York State, 1939, Report of the Temporary Legislative Commission to Formulate a Long Range State Health Program, Transmitted March 28, 1940, State of New York, Legislative Document (1940) No. 91, Albany, J. B. Lyon Company, 1940.

## PRIVATE PRACTICE IN GERMANY

An incident in connection with a proposal to revise payments to physicians in Germany during and after the war has shown that in spite of more than half a century of sickness insurance German physicians still object strenuously to further incursions on private practice. The plan suggested that physicians who were receiving fees in private practice in addition to their income from insurance should have these fees included in a scheme for the equalization of physicians' incomes. The advocate of the plan, Dr. J. Hartmann,[1] replies to some of these criticisms. In listing the objections that have been raised to his plan by physicians, he says that these ask "Where did I get the right to interfere with the private practice of my confrères and to abolish the last remnant of medical freedom, namely, the income from private practice, and thereby transform the physicians into officials"? He denies strenuously that he has any intention of interfering with private practice. He insists, however, "that the need for physicians in the new reich is so tremendous and so difficult to meet that we simply cannot permit any physician to be excluded from insurance practice." He continues in words that must sound somewhat strange to those who believe that German physicians are all converted to some sort of "socialized medicine": "In many of the communications I have received, the fear of further measures of socialization or of a threatening regimentation plays an important part." He is also emphatic in insisting that there is no intention to interfere with that "confidential relation" between physician and patient which he recognizes as an essential factor in good medical care.

1. Hartmann, J.: Once More: The Division of Fees During and After the War, Deutsche Aerzteblatt **70:** 509 (Nov. 30) 1940.

# WOMAN'S AUXILIARY

### California

A review of "For Whom the Bell Tolls" was given by Mrs. V. W. Bours at the February 21 meeting of the Alameda County auxiliary; nearly 300 attended the "Husband's Dinner," March 4.

The Fresno County auxiliary, of which Mrs. Otto Diederich is president, had as its May meeting a box supper at the home of Mrs. J. R. Walker. Each box sold for 25 cents and the money collected was added to the fund for needy doctors. A communication from the secretary of the British War Relief thanking the auxiliary for its contribution was read.

Audiometers were presented to the Santa Cruz and Watsonville schools to aid children with defective hearing by the Santa Cruz auxiliary membership.

On March 11 a health conference was sponsored by the San Diego auxiliary in conjunction with the county medical society. The California Physicians' Association plan was discussed. A "Medical Information Please" panel was given. Three doctors sit informally at a table with an auxiliary member who asks questions of first one, then another. The questions are answered as briefly as possible. The audience has shown a great interest.

One hundred and sixty members and guests attended the San Francisco meeting, at which presidents of women's clubs were invited to hear Dr. Chauncey Leake, professor of pharmacology at the University of California, speak on the "San Francisco Blood Bank." Guests were taken to see the medical society's blood bank, which is installed in the home of the society.

Miss Behrens of the Sonoma County Hospital gave an illuminating talk at the Sonoma meeting in Santa Rosa last month on "The Nurse Practice Act" and the "Trained Attendant Act."

Lloyd C. Douglas, writer and lecturer, addressed 162 regular members, 35 new members and representatives of the press at the Los Angeles meeting on "Mental Defense."

### Georgia

A questionnaire game similar to radio quiz programs was played at the recent meeting of the Woman's Auxiliary to the Bibb County Medical Society, held at the home of Mrs. C. C. Harrold, in Macon, with Mrs. C. H. Richardson as co-hostess. Mrs. J. L. King, acting as interrogator, asked questions about the auxiliary and the national medical association. Members brought toys for the children's ward at the Macon Hospital.

### New York

The regular meeting of the Onondaga County auxiliary was held in the Syracuse Memorial Hospital, March 4, Mrs. Edgar M. Neptune, presiding. Dr. Robert Ainslie, pathologist of Syracuse Memorial Hospital, spoke on "His Experiences in China." A skit representing "A Model Meeting" was portrayed, Mrs. Winthrop Pennock acting as chairman. Over $2,500 worth of medical equipment and medicine were collected by the public relations committee for the Bundles for Britain, Mrs. Nobel Chambers acting as chairman.

### Texas

The December meeting of the Dallas County auxiliary at Dallas was in the form of a wedding anniversary party and a style show of wedding gowns of various periods. The choral club of the auxiliary, under the direction of Mrs. Joseph Wolf, furnished the music and introduced each bride with songs

popular in the year she was wed. Mrs. Gordon B. McFarland was in charge of arrangements for the party.

The Jefferson County auxiliary held its annual Christmas party. Mrs. J. D. Thompson, Port Arthur, president of the auxiliary to the South Texas District Medical Society, introduced the guest of honor, Mrs. William Hibbitts, of Texarkana, president of the state auxiliary. Wives and daughters of members of the Jefferson County Medical Society sang Christmas carols under the direction of Mrs. R. B. Leggett, accompanied by Mrs. H. B. Williford.

### Wisconsin

Mrs. D. F. Gosin addressed eighteen members of the Fond du Lac auxiliary on the aims of the organization at the October meeting. This auxiliary has voted an appropriation for the Children's Home, makes bandages for the Red Cross and sponsors a Girl Scout Troop.

Miss Beatta Geiger spoke to the Douglas County auxiliary on the Womens' Industrial Home at Taycheedah. Sixteen members attended the December meeting and voted to give twenty-six *Hygeia* subscriptions to rural schools this year, an increase of eight over last year.

Seventeen members of the Winnebago County auxiliary, of which Mrs. W. N. Linn of Oshkosh is president, voted to place *Hygeia* in the beauty parlors of Oshkosh, Neenah and Menasha. Members are knitting and making surgical dressings and layettes for the Red Cross and layettes for the Visiting Nurses Association.

"The Doctor and Democracy," a speech by Dr. Eben J. Carey, dean and professor of anatomy at Marquette University School of Medicine, given by him at the annual dinner at the state medical society at Milwaukee, was read to the Rock County auxiliary members at their November meeting by Mrs. W. W. Crockett. A report of the Philanthropic Committee revealed gifts of eighty glasses of jelly, Thanksgiving favors for patients' trays and Christmas packages to Pinehurst Sanatorium, Janesville. This committee has a project for each month of the year. The Rock County auxiliary is devoting three to five minutes of each meeting to *Hygeia*, discussing its interesting articles. This auxiliary has gone "over the top" with subscriptions this year.

Part of the philanthropic work of the Waukesha County auxiliary this year has been the presentation of Christmas gifts to boys at the Wisconsin Home and Farm School at Dousman.

Twenty members of the Kenosha County auxiliary met in December at Kenosha and voted a gift of $10 value and a one year subscription to *Hygeia* to four hospitals and a one year *Hygeia* subscription to the Orthopedic School.

The Dodge County auxiliary of which Mrs. A. W. Hammond of Beaver Dam is president is making layettes for use by the county and city nurses and presented Christmas baskets, magazines, books, playing cards and games to two hospitals and the Dodge County Infirmary.

# MEDICAL LEGISLATION

## MEDICAL BILLS IN CONGRESS

*Changes in Status.*—The Senate Committee on Education and Labor, April 29 and May 2, reconsidered the Murray bill, S. 783, relating, among other things, to the deferment of medical students, interns and residents under the Selective Training and Service Act. No action was taken by the committee. It is reported that further consideration will be given the bill on May 16. H. R. 4293 has been reported to the House, providing that any person who furnishes blood for transfusion into the veins of any person entitled to and undergoing treatment at government expense, or who shall furnish blood for blood banks or for other scientific and research purposes, shall be entitled to be paid therefor a sum not to exceed $50 for each blood withdrawal.

## DISTRICT OF COLUMBIA

*Bills Introduced.*—S. 1349, introduced by Senator Bilbo, Mississippi, proposes to create a Board of Funeral Directors and Embalmers for the District of Columbia. S. 1423, introduced by Senator Reynolds, North Carolina, and H. R. 4498, introduced by Representative Randolph, West Virginia, propose to authorize the Federal Security Administrator, on application of the Secretary of State, to admit to St. Elizabeth's Hospital, for treatment, insane persons belonging to the Foreign Service of the United States who are legally adjudged insane in any foreign country and whose legal residence in one of the states, territories or the District of Columbia it has been impossible to establish.

## STATE MEDICAL LEGISLATION

### Florida

*Bills Introduced.*—S. 267, to amend the Uniform Narcotic Drug Act, proposes, among other things, that the provisions of the act shall not apply to the administering, dispensing or selling at retail of any medicinal preparation that contains in 1 fluidounce, or if a solid or semisolid preparation in 1 avoirdupois ounce, not more than 1 grain of codeine or any of its salts. The present law provides a similar exemption with respect to preparations which in the quantities stated do not contain more than 2 grains of opium, one-fourth grain of morphine, 1 grain of codeine, ⅛ grain of heroin or ½ grain of extract of cannabis. S. 318, to amend the chiropractic practice act, proposes, among other things, that "Any chiropractor who has complied with the provisions of this Act may: (1) Examine, analyze and diagnose the human living body and its diseases by the use of any physical, chemical, electrical, thermal or radionic method, and use the x-ray diagnosing, and may use any other general method of examination for diagnosis and analysis taught in any school of chiropractic recognized at any time by the Florida State Board of Chiropractic Examiners. (2) Chiropractors may adjust, manipulate or treat the human body by manual, mechanical, electrical, or natural methods, or by the use of physical means, Physiotherapy (including light, heat, water or exercise) or by the use of foods and food concentrates, food extracts, and may apply first aid and hygiene, but chiropractors are expressly prohibited from prescribing or administering to any person any medicine or drug included in Materia Medica or from performing any surgery except as hereinabove stated or from practicing obstetrics." H. 356 proposes to authorize a county having a population of 250,000 or more to establish and operate a hospital for the care of such residents of that county as may have been committed to the hospital for the insane of the state of Florida. H. 428 proposes to prohibit the operation of a convalescent home for the care of persons recovering from illness, semi-invalids, or persons of unsound mind, unless the home is in the charge and under the direction of a duly licensed physician, or unless a licensed physician is employed to visit and direct the care of the patients of the home at least once a week. H. 497 proposes to enact a separate practice act for medical technologists and to create a board of medical technologists to examine and license persons desiring to practice as registered medical technologists. The bill defines a "Medical Technologist" as a natural person who is engaged in the practice of approved or experimental technical procedures, the results of which are interpreted by the physician in the diagnosis of disease. After July 1, 1942 the bill proposes to make it unlawful for any person not registered by the board to practice as a medical technologist. However, the bill is not to apply to an office assistant or a nurse who in addition to his or her routine duties performs laboratory procedures the results of which are used only by the employer physician in his private practice of medicine and who assumes responsibility for the work so performed. An applicant for registration must present evidence satisfactory to the board that he has satisfactorily persued at a reputable college or university an eight hours course in biology (of which four hours must be in zoology),

three hours in bacteriology, eight hours in inorganic chemistry and four hours in organic chemistry.

### Illinois

*Bill Introduced.*—H. 629 proposes so to amend the Uniform Narcotic Drug Act as to include within the definition of "narcotic drugs" diethyl-barbituric acid.

### Michigan

*Bill Introduced.*—S. 322 proposes to appropriate $50,000 to the superintendent of public instruction "to be expended in assisting the education of children and adults afflicted with speech impediments." S. 382 proposes to enact what is cited as the "Uniform Michigan, Food, Drug and Cosmetic Act" to regulate the manufacture, sale, distribution and advertising of foods, drugs, cosmetics and therapeutic devices.

### Missouri

*Bill Introduced.*—S. 185, to amend the medical practice act, proposes that "any person who having attended any medical college, and has received at least three courses of lectures from any medical college or colleges, and has had at least one course as practitioner in any general or special hospital, who is now and has been for a period of at least twenty years a resident of the state of Missouri, and who has during twelve years of such time been actively engaged in the practice of medicine in the locality where he resides, shall be regarded as a licensed and registered physician under the provisions of this act."

### New Jersey

*Bills Introduced.*—S. 345 proposes that judgments entered against a decedent in his lifetime, funeral charges and expenses, and the hospitals', physicians' and nurses' bills during the last sickness shall have preference and be paid first out of the personal and real estate of the decedent. Committee Substitute for Assembly 60 and 257, to amend the laws relating to the practice of chiropody, proposes to clarify the statement as to the scope of a license to practice chiropody.

### Oklahoma

*Bills Introduced.*—H. 545 proposes to enact a separate physiotherapy practice act and to create a board of physiotherapy to examine and license applicants for licenses to practice physiotherapy. The bill states "For the purpose of this Act Physiotherapy is defined to be the employment of the following methods: Hydrotherapy, electrotherapy, massage, baths, thermotherapy, heliotherapy, light-therapy, corrective gymnastics and diet for the stimulation and correction of the human body." H. 549 proposes that no ambulance shall be used for transporting sick or injured persons except under the charge of a licensed first-aider, an intern in an approved hospital, or a licensed physician. The bill proposes to authorize the governor to appoint a board of first aid examiners, who are to be authorized to examine and recommend for licensure by the state commissioner of safety of first aiders. Applicants for such a license must be 20 years or more of age and have completed a practical course in first aid of a minimum of twenty-five hours' class work or a semester's work in practical first aid in the junior or senior year of high school or a semester's work in practical first aid in a college or university. H. 560, to supplement the medical practice act, proposes to require licentiates to renew their licenses annually with the board on or before June 10 and at that time to pay annual renewal fees of $3.

### Pennsylvania

*Bills Introduced.*—S. 644 proposes that all hospitals having one hundred beds or more and receiving any appropriation from the state shall at all times have in attendance at least one licensed physician or at least one student intern. A student intern may remain in attendance only during the period for which he or she is exempt from licensure to practice medicine and surgery. The bill proposes to define "student intern" as any one pursuing a course in an approved hospital as required by the medical practice act of an applicant for licensure to practice medicine. H. 911 proposes that in every trial or hearing where testimony is taken in any civil proceeding the hospital records referring solely to injuries sustained by the patient and the treatment thereof made as a part of the ordinary hospital routine or in the course of the ordinary business of the hospital shall be admissible in evidence on identification by the custodian of such records and it shall not be necessary that such records be proved by the physician or intern who made them. H. 1270, to amend the law requiring the licensing of private nursing homes and private hospitals by the department of welfare as a condition precedent to their operation, proposes, in effect, that such requirement shall apply only to private nursing homes and private hospitals operating for profit. H. 1339 proposes to enact a separate naturopathic practice act and to create an independent board of naturopathic examiners to examine and license applicants for licenses to practice naturopathy. The bill proposes to define naturopathy as "that system of the healing art which uses and prescribes the following practices and usages, diagnosis and the practice of the combined physiological, mechanical and material sciences of healing as taught in reputable schools, institutes and colleges of naturopathy which shall include physiotherapy, hydrotherapy, mechanotherapy, psychotherapy, phythotherapy and electrotherapy, corrective and orthopedic gymnastics, external application, manipulation and nutritional control."

### Rhode Island

*Bill Introduced.*—H. 1031 proposes to regulate the manufacture, sale, distribution and advertising of foods, drugs, cosmetics and therapeutic devices.

### Wisconsin

*Bills Introduced.*—A. 821, to amend the law requiring the several counties, except those having a population in excess of 250,000, to provide, without prior authorization from county officials, hospitalization for relief clients in emergency cases, proposes to make such counties liable also for the care rendered by a physician and surgeon to a relief client in such cases when in the reasonable opinion of a physician called to attend such person immediate care is required and a delay to obtain authorization would likely be injurious to the patient. There is to be no liability, however, for a physician's care under such circumstances unless within twenty-four hours after the admission of the patient to a hospital written notices by the attending physician and of the hospital are mailed to the appropriate county officials. A. 827 proposes to require every licensed physician engaged in the prenatal care of a pregnant woman, or attending such a woman for the first time at the time of delivery, to take, or cause to be taken, a sample of her blood and to submit the sample to a laboratory, approved by the state board of health, for a standard blood test for syphilis.

## OFFICIAL NOTES

### RADIO BROADCASTS

"Doctors At Work" is the title of the sixth annual series of dramatized radio programs that are being presented by the American Medical Association and the National Broadcasting Company.

Tickets are available for each broadcast. Address the Bureau of Health Education, American Medical Association, 535 North Dearborn Street, Chicago. Tickets are free, but a stamped, self-addressed envelop should accompany requests.

The program for April 30 was canceled in order to yield the time to the President of the United States. In consequence the program originally scheduled to depict the "doctor in arts and letters" will be combined with that on the "doctor as a citizen," and all programs except the closing program will be postponed one week. The new schedule is as follows:

May 14. So Mothers May Live.
May 21. Physician to the Community.
May 28. Doctors' Hobbies and The Doctor as a Citizen.
June 4. A. M. A. Convention.

# Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

## CALIFORNIA

**Personal.**—Dr. Alson R. Kilgore, San Francisco, secretary-treasurer of California Physicians' Service since its inception, has resigned as secretary but will continue as treasurer. Dr. Albert E. Larsen, San Francisco, medical director, will also serve as secretary.——Dr. Everett Morris, superintendent of Wish-i-ah Sanatorium, Auberry, resigned recently. He had been medical director since the opening of the sanatorium on May 16, 1929.

**Cardiac Program in San Francisco Area.**—Three counties have been selected near the San Francisco area as a field for demonstration in a cardiac program which is part of the crippled children's services of the state department of public health. Funds have been supplied by the U. S. Children's Bureau. The program seeks to reduce the losses resulting from heart disease by providing:

1. Diagnostic services for all children referred including home visits for diagnosis of patients acutely ill. Children already under medical care are cleared with their physicians before admittance to the clinic.
2. Medical, hospital and convalescent care for patients whose parents are unable to pay. Children suffering from congenital and functional heart disease at present are not eligible for care.
3. Medical, public health nursing and social work service in following all patients accepted for care under the program.
4. Epidemiologic services in the case of rheumatic fever.
5. Continuity of educational opportunities for patients through the cooperation of state and local education departments.

The program is in charge of a pediatrician who conducts screening clinics in the counties to examine all children referred. Children with a rheumatic history are referred for complete diagnostic study to the Children's Hospital in Oakland, where the medical services are centered for the present and where hospitalization is provided for active cases of rheumatic fever. Concurrently a survey of heart disease in children is being conducted by the state department of public health at the request of the California Heart Association through social security funds.

## CONNECTICUT

**Physicians Wanted.**—The personnel department of Connecticut announces that open competitive examinations will be held to fill the positions of assistant superintendent (psychiatric), physician and psychiatrist, senior physician (psychiatric), assistant physician (psychiatric), director of clinical laboratories, senior physician, assistant physician and local health consultant. Applications must be filed on or before May 15 or bear a postmark of that date. The Connecticut residence requirement is waived for these positions, but candidates must be citizens of the United States. All foreign born candidates will be required to submit evidence of citizenship; naturalization papers should be submitted with the application. Additional information may be obtained from the Personnel Department, State Capitol, Hartford.

## DELAWARE

**Society News.**—Dr. Joseph S. Wall, Washington, D. C., addressed the New Castle County Medical Society in Wilmington, March 18, on "Pneumonias of Childhood." Dr. Charles F. Geschickter, Baltimore, discussed "Primary Bone Tumors" before the society April 15 and Dr. John F. Hynes, Wilmington, "Metastatic Bone Carcinoma—Diagnosis and Treatment."

## IDAHO

**Hospital News.**—A new wing at St. Joseph's Hospital, Lewiston, was recently opened, increasing the hospital's capacity by thirty beds.——Mrs. William E. Borah, widow of the late senator, has offered a 15 acre tract of land near Boise for construction of a state tuberculosis hospital. The offer was made to the Idaho Anti-Tuberculosis Association through Mr. C. C. Anderson, a merchant in Boise.

**Occupational Licensing Board.**—A board composed of six physicians to examine applicants for license in certain occupations has been appointed by Governor Clark. The physicians who will conduct medical examinations for persons applying for licenses in any of seventeen occupations for which the law requires licenses are Drs. Albert B. Pappenhagen, Orofino; Joseph E. Baldeck, Lewiston; Harold W. Stone, Boise; William B. Handford, Caldwell; Casper W. Pond, Pocatello, and George C. Halley, Twin Falls.

## ILLINOIS

**Meeting of Pathologists.**—The Illinois Society of Pathologists will meet at the Palmer House, Chicago, May 20. Dr. Raphael Isaacs will open the session with a lecture entitled "Changes in the Blood Cells of Diagnostic and Prognostic Value." Dr. Samuel A. Levinson will conduct a clinical pathologic conference, and Drs. M. Herbert Barker, Robert Bruce Malcolm and James P. Simonds will participate in a symposium on the role of pathology in medicine. All the speakers are of Chicago.

**Postgraduate Conferences.**—The First Councilor District Medical Society conducted a postgraduate conference in Freeport, April 23. The following participated:

Dr. Harry Leichenger, Chicago, Scarlet Fever.
Dr. Harry A. Oberhelman, Chicago, Physical Problems in Intestinal Infections.
Dr. Eric Oldberg, Chicago, Head Injuries.
Dr. Geza de Takats, Chicago, Management of Peripheral Vascular Disease.
Dr. Charles E. Galloway, Evanston, Management of Abortion.
Dr. Nathaniel G. Alcock, Iowa City, Value of Urologic Findings in Diagnosis of Abdominal Tumors.
Dr. Chauncey C. Maher, Chicago, Etiologic Diagnosis of Heart Disease.

The Fourth Councilor District Medical Society sponsored a similar conference in Galesburg on April 24 with the following speakers, all of Chicago:

Dr. Robert S. Berghoff, Heart Disease.
Dr. Carlo S. Scuderi, Fractures from a General Practitioner's Viewpoint.
Dr. Lee C. Gatewood, Gastrointestinal Diseases.
Dr. Frederick H. Falls, Ectopic Pregnancy and the New Test for Pregnancy.

**Public Health Meeting.**—The first annual public health conference of the Illinois Public Health Association in cooperation with the Cook County public health agencies and the public health and hygiene section of the Illinois State Medical Society will be held at the Hotel La Salle, Chicago, May 19-20. There will be round table discussions on the typhoid epidemic at Manteno State Hospital; public health problems in military areas; nurses in national defense; public health dentistry; community planning in public health and tuberculosis as a national health problem. One session will be devoted to a summary of the possible relationship of poliomyelitis to sanitation. At the banquet with Dr. Nathan S. Davis III, Chicago, presiding, speakers will be Dr. Reginald Atwater, New York, executive secretary, American Public Health Association, on "The New Day in Public Health," and Dr. Henry A. Holle, Chicago, district medical consultant, U. S. Public Health Service, "National Defense and the Public Health." A luncheon session will be addressed by Drs. Clifford J. Barborka, Chicago, and J. Howard Beard, Urbana, on "Nutrition and the Public Health" and "A Community Plans for Health," respectively.

### Chicago

**The Luckhardt Lecture.**—Dr. Howard T. Karsner, professor of pathology, Western Reserve University School of Medicine, Cleveland, will deliver the eighth annual Arno B. Luckhardt Lecture at the University of Chicago on May 15. His subject will be "Ovarian Tumors with Endocrine Dysfunction." The lecture is given under the auspices of Delta chapter of Phi Beta Pi.

**Nutrition in Defense of Democracy.**—The Chicago branch of the American Association of Scientific Workers conducted a symposium on "Nutrition in Defense of Democracy," April 15, with Dr. Anton J. Carlson presiding. Speakers included Hazel K. Stiebeling, Ph.D., bureau of home economics, U. S. Department of Agriculture, Washington, D. C., on "Nutrition in the United States Today"; Paul E. Howe, Ph.D., colonel, sanitary corps, U. S. Army, Washington, "Nutrition in the Armed Forces," and Dr. Russell M. Wilder, Rochester, Minn., chairman of the committee on nutrition and foods of the National Research Council, "Nutrition in the United States—A Plan for the Future."

## KANSAS

**Society News.**—The Shawnee County Medical Society was addressed in Topeka, April 7, by Drs. Lewis L. Robbins on "Anorexia Nervosa"; Robert P. Knight, "Military Psychiatry," and Carl G. D. Tillman, "Recently Developed Diagnostic and Therapeutic Technics in Neuropsychiatry."——The speakers before the Golden Belt Medical Society in Junction City, April

3, were Drs. Laurence S. Nelson, Salina, on "Commoner Injuries of the Hand"; Robert Lee Hoffmann, Kansas City, Mo., "Diseases of the Female Urethra"; Fred J. McEwen, Wichita, "Cardiac Emergencies," and Earl L. Mills, Wichita, "Functional Heart Disease." —— Dr. Hyman I. Spector, St. Louis, addressed the Kansas Tuberculosis Association, April 14, in Topeka on "Early Discovery of Tuberculosis, Particularly with the Use of the X-Ray."

## MASSACHUSETTS

**Doctors' Symphony Orchestra.** — The Boston Doctors' Symphony Orchestra will give its second annual concert, May 11, in Jordan Hall. Alexander Thiede will conduct, and Dr. Werner Mueller will appear as soloist. Proceeds of the concert will be used to establish a fund for a free bed in each of the following hospitals: Beth Israel Hospital, Children's Hospital, Massachusetts Eye and Ear Infirmary and Boston Dispensary.

**State Medical Meeting in Boston.**—The one hundred and sixtieth annual session of the Massachusetts Medical Society will be held at the Copley-Plaza, Boston, May 21-22, under the presidency of Dr. Walter G. Phippen, Salem. Section meetings will be divided between the University Club and the Hotel Lenox. Out of state speakers will include:

Dr. William H. Sebrell Jr., Washington, D. C., The Clinical Value of Vitamins.
Dr. John Scudder, New York, Fluid Administration in Surgery in the Light of Recent Advances in Water and Electrolytic Balance.
Dr. Irving S. Wright, New York, Problems in the Management of Peripheral Vascular Disease.
Dr. Richard S. Weiss, St. Louis, Treatment of Common Skin Diseases.
Dr. Eugene P. Pendergrass, Philadelphia, The Value of the Roentgen Examination in the Diagnosis of Intestinal Obstruction.
Dr. William Osler Abbott, Philadelphia, Indications for the Use of the Miller-Abbott Tube.
Dr. Allan T. Kenyon, Chicago, Problems in the Recognition and Treatment of Testicular Insufficiency.

The section on pediatrics will conduct a symposium, Wednesday, on the conditioned reflex of Pavlov. Thursday morning a symposium on hormones will be held. Thursday afternoon will be given over to a military symposium with the following speakers:

Dr. Wesley Bourne, Westmount, Que., Canada, Procedure in Anesthesia for War Purposes.
Dr. Philip D. Wilson, New York, Treatment of Compound Fractures Resulting from Enemy Projectiles.
Ross A. McFarland, Ph.D., Boston, Problem of Fatigue in Aviators.
Dr. Gilbert Horrax, Boston, Treatment of Gunshot Wounds of the Brain.
Dr. Walter B. Cannon, Boston, A Report of Newer Work on the Shock Problem.
Dr. Stuart Mudd, Philadelphia, Blood and Blood Substitutes in the Treatment of Hemorrhage, Secondary Shock and Burns.

Dr. Edward William Alton Ochsner, New Orleans, will deliver the Shattuck Lecture at the annual dinner, Wednesday evening, on "Thrombosis and Thrombophlebitis," and the annual discourse will be presented, Thursday morning, by Dr. Albert Warren Stearns, Boston, on "The Role of the Physician in a Competitive Society."

## MINNESOTA

**State Medical Meeting in St. Paul.**—The eighty-eighth annual session of the Minnesota State Medical Association will be held at the St. Paul Auditorium, St. Paul, May 26-28, with headquarters at the Hotel St. Paul, with the Ramsey County Medical Society as host. Out of state speakers will include:

Dr. Walter M. Simpson, Dayton, Ohio, New Development in the Diagnosis and Treatment of Brucellosis.
Dr. Edward D. Churchill, Boston, War Injuries of the Chest.
Dr. Henry C. Sweany, Chicago, Pathologic Interpretations of Radiological Shadows in Pulmonary Tuberculosis.
Dr. Archibald D. McCannel, Minot, N. D., Eye Injuries.
Dr. Thomas M. Joyce, Portland, Ore., Twenty-Five Consecutive Compound Fractures.
Dr. Sumner L. S. Koch, Chicago, Primary Treatment of Wounds.
Dr. Henry H. Kessler, Newark, N. J., Rating of Disabilities.
Dr. Albert D. Kaiser, Rochester. N. Y., Role of Tonsils and Adenoids in Respiratory Infections.

The Russell D. Carman Memorial Lecture, sponsored by the Minnesota Radiological Society, will be delivered Tuesday afternoon by Dr. LeRoy Sante, professor and head of the department of radiology, St. Louis University School of Medicine, on "Roentgen Observations of Chest Injuries." The annual banquet will be addressed in the evening by Dr. Berton J. Branton, Willmar, president of the state medical association, and Col. John R. Hall, Washington, D. C., director of the hospital division, surgeon general's staff, U. S. Army. The medal of the Southern Minnesota Medical Association will also be awarded at this time. Wednesday afternoon will be devoted to a symposium on medical preparedness for national defense with the following speakers:

Dr. Frederick L. Smith, Rochester, Preparedness in Minnesota: A Report.
Colonel Hall, The Doctor in the New Army.
Dr. Russell M. Wilder, Rochester, Nutrition and Defense.
Dr. Richard B. Hullsiek, St. Paul, Physical Defects of Selectees.
Dr. Harold S. Diehl, Minneapolis, Medical Officers of the Future.

A special all day program on the surgery of trauma will be offered Tuesday for the state association and the Great Northern Railway Surgeons' Association, which will also be in annual session at this time. The Minnesota Society for the Prevention of Blindness will sponsor a dinner meeting Monday May 26 at the Hotel St. Paul, and Dr. Gaylord W. Anderson, Minneapolis, will discuss "Conservation of Vision." Societies sponsoring guest speakers at the state society meeting this year include the St. Paul Clinical Club, Dr. Churchill; the Trudeau Society, Dr. Sweany; the Northern Minnesota Medical Association, Dr. Kessler, and the Northwestern Pediatric Society, Dr. Kaiser. John M. Pratt, executive administrator, National Physicians' Committee for the Extension of Medical Service, Chicago, will address a meeting of this committee on Monday May 26. The fortieth annual reunion of the class of 1901 of the University of Minnesota Medical School will be held Monday at a dinner. There will be other reunions and entertainment, including the annual golf tournament at the White Bear Yacht Club on Sunday. The woman's auxiliary to the state medical society will meet in annual session May 26-28, and the Minnesota branch of the American Medical Women's Association will hold a luncheon meeting May 26.

## MISSISSIPPI

**Health Units.**—Dr. George E. Gibbons, Macon, is now health officer of the Noxubee County health unit and Dr. George B. Neukom, Batesville, has been placed in charge of the health department in Panola County. New health units have been created for Benton-Tippah counties with headquarters in Ripley; Prentiss County with headquarters in Booneville, and a Tri-County District composed of Covington, Jefferson Davis and Lawrence counties with headquarters in Prentiss. Dr. John C. Powell, Coldwater, has been named health officer of Prentiss County. Dr. Aubrey A. Aden, Yazoo City, has been appointed health officer of the Benton-Tippah unit. Dr. Isee L. Connell, Birmingham, has been placed in charge of the Clarke County health department.

**Grant for Medical Library.**—The University of Mississippi Medical School, University, has received a three year grant totaling $7,500 for the Rowland Medical Library. The gift is part of the University Library Fund created by grants from the General Education Board and matched by the university. The first year's grant will be used to complete the files of the scientific periodicals now carried by the library. In most cases this will be carried back to 1920, but in special cases the files will be completed back to volume one of the respective periodicals. Additional periodicals, monographs and special textbooks will be purchased. The routine program of the library will be pursued as usual with funds from the regular budget and "The Friend of the Library," an organization sponsored by Dr. Peter W. Rowland, Oxford, field director of the library. The library contains seven thousand volumes, of which one hundred have been added since the first of the year. In 1938 the university launched a five year program to enlarge the library.

## NEBRASKA

**Sentenced for Forgery and Illegal Practice.**—According to the Grand Island *Independent*, Bruce L. Van Wyck, who posed as a physician at Wood River in January, was sentenced to three years in the state penitentiary on each of two counts of forgery and fined $100 on a charge of practicing medicine without a license after he pleaded guilty before District Judge E. G. Kroger in Grand Island, February 10. Van Wyck is reported since 1930 to have served two terms in federal prisons at Lewisburg, Pa., and Stillwater, Minn., for impersonating a federal officer and for grand larceny by check. He was released from Stillwater on Dec. 21, 1940 and in less than a month he appeared in Wood River posing as "Dr. H. B. Remore," it was said. Later he was located in Cheyenne, Wyo., where he said he was an operator of night clubs. He was arrested there, January 26, on charges of forgery and later released to the Nebraska authorities for prosecution.

## NEW JERSEY

**Chemist Appointed.**—Oskar Wintersteiner, Ph.D., assistant professor of biochemistry at Columbia University College of Physicians and Surgeons, New York, since 1929, has been appointed head of the division of organic chemistry at the Squibb Institute for Medical Research, New Brunswick, effective July 1. Dr. Wintersteiner succeeds the late Erhard Fernholz, whose body was recently found in Lake Carnegie near his home in Princeton.

**Society News.**—Dr. Emil Novak, Baltimore, addressed the Passaic County Medical Society, April 17, at Hope Dell on "Cancer as It Concerns the Gynecologist."——Dr. Hugo Roesler, Philadelphia, addressed the Hudson County Medical Society, Jersey City, April 1, on "Aspects of Circulatory Disturbances."——Dr. Catharine Macfarlane, Philadelphia, discussed "Progress in Cancer Prevention Research" at a meeting of the Cumberland County Medical Society, Bridgeton, April 8.——Dr. Francis Carter Wood, New York, addressed the Essex County Medical Society, Newark, April 10, on "Improvements in Diagnosis and Treatment of Lymph Node Disease."——Dr. Walter I. Lillie, Philadelphia, addressed the Medical Society of Atlantic County, Atlantic City, April 18, on "Fundal Changes Associated with Arterial Hypertension."

## NEW YORK

**Research in Urology.**—The department of urology of the University of Rochester School of Medicine is to receive about $1,200,000 from the estate of the late Dr. Henry C. Buswell, at one time associate professor of medicine at the University of Buffalo. The estate is set up in trust funds for Dr. Buswell's widow and two sisters and on their deaths will revert to the university. Dr. Buswell died in Strong Memorial Hospital, Rochester, March 4, 1940.

**Society News.**—Drs. John C. M. Brust and John B. Alsever, Syracuse, addressed the Steuben County Medical Society, Corning, April 10, on "Diagnosis and Management of Common Anorectal Diseases" and "Organization of a Plasma and Blood Transfusion Service in the Syracuse University Medical Center" respectively.——Dr. Henry H. Ritter, New York, addressed the Fulton County Medical Society, Gloversville, April 4, on "The Fracture Problem" and the Oswego County Medical Society, Fulton, April 3, on "Treatment of Common Fractures."——Col. Charles M. Walson, M. C., U. S. Army, surgeon, Second Corps Area, Governors Island, addressed the Medical Society of the County of Westchester, White Plains, April 15, on "Expansion of Medical Department Activities in the Army."——Dr. Cecil K. Drinker, Boston, gave an Eastman Memorial Lecture at the University of Rochester School of Medicine, April 3, on "Some Practical Considerations of the Lymphatic System."——Clarence Cook Little, Sc.D., Bar Harbor, Maine, managing director of the American Society for the Control of Cancer, gave a public lecture on "The Optimistic Side of Cancer" in Rochester, March 30, under the auspices of the Rochester Academy of Medicine, the Medical Society of the County of Monroe and the University of Rochester School of Medicine.

### New York City

**The Brickner Lecture.**—Dr. Franklin C. McLean, professor of pathologic physiology, University of Chicago, The School of Medicine, delivered the tenth Walter M. Brickner Lecture at the Hospital for Joint Diseases, May 2, on "Calcification and Ossification: Some Aspects of the Physiology of Bone."

**Harvey Lecture.**—The eighth Harvey Lecture of the current series sponsored by the Harvey Society at the New York Academy of Medicine will be delivered, May 15, by Rebecca C. Lancefield, Ph.D., associate at the Rockefeller Institute for Medical Research. Her subject will be "Specific Relationship of Cell Composition to Biological Activity of Hemolytic Streptococci."

**Film on Wassermann and Kline Tests.**—The New York City Department of Health has prepared a 16 mm. film on the Wassermann and Kline tests on specimens of blood and spinal fluid. The film, produced by the bureau of social hygiene, is called "The Laboratory and Venereal Disease Control." It is available in black and white and in color and offered without charge by the bureau for showings to medical schools and societies, to hospital staffs, to nursing groups and to laboratory and public health workers in New York.

**Symposium on Syphilis.**—The annual symposium on syphilis at Columbia University College of Physicians and Surgeons was held March 28-29 and April 4-5. The first week end meetings were devoted to lectures by Drs. Harry C. Solomon, Boston; Norman R. Ingraham and John A. Kolmer, Philadelphia; Edwin P. Maynard Jr., Ross Golden, Paul C. Swenson and A. Benson Cannon. The second period was spent on demonstrations in the Vanderbilt Clinic. Fourth year students of Cornell University Medical College and New York University College of Medicine were invited to participate.

**Publication of Dr. Schilder's Books.**—The Society for Psychotherapy and Psychopathology of New York has appointed a committee headed by Dr. Bernard Glueck to arrange for the publication of one or more of the books of the late Dr. Paul F. Schilder. Contributions to make the publication possible may be sent to the secretary of the committee, Dr. Frank J. Curran, 404 East Fifty-Fifth Street. Dr. Schilder, who died on Dec. 8, 1940 as a result of injuries received when struck by an automobile, was research professor of psychiatry at New York University College of Medicine and clinical director of the psychiatric division of Bellevue Hospital. He was the author of "Introduction to a Psychoanalytic Psychiatry" and several books published in Berlin and Vienna.

## NORTH CAROLINA

**Courses in Medicine.**—The University of North Carolina School of Medicine, Chapel Hill, and its extension division have recently sponsored graduate courses in medicine in Wilson and Raleigh. The speakers on the Wilson series were:

Dr. Eldridge L. Eliason, Philadelphia, The Catastrophes of Peptic Ulcers, March 5.
Dr. Alexis F. Hartmann, St. Louis, Gastrointestinal Diseases in Children, March 19.
Dr. Joseph Earle Moore, Baltimore, Interpretation of Serologic Tests for Syphilis, March 26.
Dr. William B. Porter, Richmond, Va., The Heart in Pregnancy, April 2.
Drs. Baldwin H. E. W. Lucke and Francis C. Wood, Philadelphia, clinico-pathologic conference, April 9.
Dr. Edward A. Schumann, Philadelphia, Management of Pregnancy, April 16.

In the series at Raleigh the speakers were:

Dr. Harrison F. Flippin, Philadelphia, Uses and Abuses of Sulfanilamide, Sulfapyridine and Sulfathiazole, March 14.
Dr. Hartmann, Gastrointestinal Diseases in Children, March 20.
Dr. Louis A. Buie, Rochester, Minn., Diagnosis and Common Treatment of Diseases of the Colon and Rectum, March 28.
Dr. William Wayne Babcock, Philadelphia, Diagnosis of Acute Abdominal Conditions, April 4.
Dr. Russell L. Haden, Cleveland, Diagnosis and Treatment of Anemias, April 11.
Dr. Schumann, Management of Pregnancy, April 17.
Dr. Percy S. Pelouze, Philadelphia, Office Urology, April 25.

## OKLAHOMA

**State Medical Meeting.**—The forty-ninth annual session of the Oklahoma State Medical Association will be held in Oklahoma City, May 19-21, with headquarters at the Skirvin Tower Hotel. The following guest speakers will address the general sessions:

Dr. Ralph Pemberton, Philadelphia, Present Status and Treatment of Arthritis.
Dr. Axel N. Arneson, St. Louis, Carcinoma of the Cervix Uteri.
Dr. Lauren H. Smith, Philadelphia, Psychiatric Aspects of the National Emergency.
Dr. Earl Garside, Chicago, Conservative Treatment of Appendiceal Peritonitis.
Dr. Meyer Wiener, St. Louis, Significance of Accurate Detailed Ophthalmological Information and Its Interpretation as a Factor in Neurological Diagnosis.
Dr. James R. Reinberger, Memphis, Tenn., Diagnosis and Treatment of Puerperal Infections with Special Reference to Sulfanilamide.

The guests will also address section meetings. The Oklahoma County Medical Association will entertain members of the state association at supper Monday evening May 19, after which there will be addresses by Col. William Lee Hart, surgeon of the Eighth Corps Area, U. S. Army, Fort Sam Houston, Texas, on "Organized Medicine in the National Defense Program" and Col. Raymond W. Bliss, commanding officer, station hospital, Fort Sill, on "The Present World War from the Medical Standpoint." There will also be a meeting of the selective service examining physicians, with Lieut. Col. Richard H. Eanes, of the Selective Service National Headquarters, Washington, D. C., and Gov. Leon Phillips as the speakers. The Oklahoma Pediatric Association will meet Monday May 19 with Dr. Herbert J. Rinkel, Kansas City, Mo., as guest speaker on allergy. At a public health meeting Tuesday, May 20, Dr. Robert B. Greenblatt, Augusta, Ga., will discuss "Public Health Aspects of the Five Venereal Diseases" and I. Forrest Huddleson, Ph.D., East Lansing, Mich., "Diagnosis

and Control of Brucellosis." The woman's auxiliary to the state association will hold its annual meeting May 19-20. Dr. Henry H. Turner, Oklahoma City, is president of the association.

## PENNSYLVANIA

**Tuberculosis Meeting.** — The forty-ninth annual meeting of the Pennsylvania Tuberculosis Society was held at Erie, April 16-17. The speakers included Dr. Edgar S. Everhart, Harrisburg, medical adviser, state selective service board, on "Public Health in Relation to National Defense Preparations"; Dr. Robert E. Plunkett, New York State Department of Health, Albany, "The Chest Clinic as a Diagnostic and Consultation Center for the General Practitioner of Medicine," and Theodore Hatch, M.S., associate professor of industrial hygiene, department of public health and preventive medicine, University of Pennsylvania School of Medicine, Philadelphia, "Tuberculosis Control in the Industrial Health Program." At a medical session at Hamot Hospital Drs. Louis H. Clerf, Philadelphia, and Walter L. Rathbun, Cassadaga, N. Y., spoke on "Use of Bronchoscopy in Tuberculosis and Other Bronchopulmonary Diseases" and "Tuberculosis of the Lungs in the Younger Age Groups" respectively.

### Philadelphia

**Physical Therapy Meeting.**—The Pennsylvania Physical Therapy Society and the Philadelphia Orthopedic Club held a combined meeting at Jefferson Hospital, April 10, with the following speakers, among others: Drs. Abraham M. Rechtman, on "Early Treatment of Infantile Paralysis"; Robert P. Sturr, "Physical Therapy in Relation to Peripheral Vascular Disease of the Extremities," and Benjamin Ulanski, "Treatment of Sciatica."

**Collection of Apothecaries' Wares.** — A collection of apothecaries' jars and mortars assembled by the late Mr. David Costelo, a New York pharmacist, has been bought by Mr. Josiah K. Lilly, Indianapolis, chairman of the board of directors of Eli Lilly and Company, and presented to the Philadelphia College of Pharmacy and Science. Both Mr. Costelo and Mr. Lilly are graduates of the college. The collection contains more than one hundred and fifty rare pieces, some of which are several hundred years old, including jars of faenza and majolica, decorated with coats-of-arms and heraldic insignia, many of blown glass, Spanish, Italian, Delft and French alberellos and an extensive collection of mortars and pestles in bronze, marble, wood and ivory.

## TENNESSEE

**State Medical Election.**—Dr. James B. Stanford, Memphis, was named president-elect of the Tennessee State Medical Association at the annual meeting in Nashville, April 8-10, and Dr. Hiram A. Laws Jr., Chattanooga, became president. Vice presidents elected were Drs. Cassius W. Friberg, Johnson City; John S. Freeman, Springfield, and Glenn D. Batten, Jackson. Dr. Harrison H. Shoulders, Nashville, was reelected secretary. The 1942 meeting will be held in Memphis.

**New Health Officers.**—Dr. Roy J. Settle, formerly of Inman, S. C., has been appointed director of the Monroe County health unit with headquarters at Madisonville.——Dr. Harry E. Wright, formerly of Dallas, Texas, has been appointed health officer of Marshall County.——Dr. Clifford B. Cole, Dyersburg, has been appointed health officer of Fayette County to succeed Dr. Henry N. Moore, Somerville, who resigned to enter private practice.——Dr. Landon H. Gurnee, Knoxville, has been named director of the Unicoi County health unit to succeed Dr. Walter C. Humbert, Erwin, who is in military service.

## WASHINGTON

**Society News.**—Drs. Conrad Jacobson and Roger Anderson, Seattle, addressed the King County Medical Society, Seattle, April 7, on "Factors in Surgical Mortality (Critical Hospital Survey)" and "Advances in the Treatment of War Injuries" respectively.——Dr. Edward R. Anderson, Tacoma, addressed the Pierce County Medical Society, Tacoma, April 22, on "Oral and Parenteral Use of the Synthetic Vitamin K."

**Personal.**—Dr. Albert I. Bouffleur, Seattle, has retired as chief surgeon of the Chicago, Milwaukee, St. Paul & Pacific Railroad after thirty years in that position and fifty-one years with the road. His successor will be Dr. Harry Eugene Allen, Seattle, who has been Dr. Bouffleur's assistant for many years.——Dr. Cecil R. Fargher, Vancouver, has been named health officer of Vancouver and Clark County.

## GENERAL

**Branch Meeting.**—The Western branch of the American Public Health Association will hold its annual meeting at the Hotel San Diego, San Diego, Calif., May 26-29. Among the speakers will be Drs. Jacob C. Geiger, San Francisco, on "England's Wartime Experience in Public Health and What We Can Learn from It" and Walter T. Harrison, San Francisco, "The Public Health Program in Areas Adjacent to Military Centers."

**Awards for Investigation of Epilepsy.**—The Laymen's League Against Epilepsy announces that two awards of $100 each for the best original unpublished observations or investigations bearing on the subject of epilepsy have been granted. Dr. Walter L. Bruetsch, Central State Hospital, Indianapolis, received one offered for work done in a state epileptic colony or mental hospital for his observations on "Rheumatic Epilepsy." The second award, offered for work done elsewhere than in state institutions, went to Dr. Frederick A. Fender, Stanford University Hospital, San Francisco, for his work on "Convulsions Following Remote Electrical Stimulation of Subcortical Cerebral Levels."

**Certification of the General Practitioner.**—The National Board of Medical Examiners has appointed a committee to study the question of certifying the general practitioner, with Dr. Waller S. Leathers, Nashville, Tenn., as chairman. Dr. Louis B. Wilson, director of the Mayo Foundation, Rochester, Minn., has been asked to serve as consultant to the committee. The committee will confer with various medical authorities and organizations as to the best method of providing recognition for the progressive, up-to-date, efficient and well trained general practitioner, the announcement said. Such a certification would bear a relation to general practice similar to that of the certificates now granted by the examining boards in the specialties, it was said.

**Grants for Cancer Research.** — The National Advisory Cancer Council at its regular meeting at the National Cancer Institute, Bethesda, Md., March 31, approved the following grants for research:

Meharry Medical College, Nashville, Tenn., $1,100 for maintenance of clinical records for statistical analysis.

Jackson Memorial Laboratory, Bar Harbor, Maine, $15,000 for research on genetics of cancer.

Barnard Free Skin and Cancer Hospital, St. Louis, $5,000 for research on changes in cancer cells.

American Registry of Pathology, Army Medical Museum, Washington, D. C., $1,000 for collection and registry of pathologic specimens.

Cornell University Medical College, New York, $2,700 for study of "butter yellow" liver tumors of rats.

The council approved a plan to organize programs of research and of education on cancer of the stomach.

**Meeting of Otologists.**—The seventy-fourth annual meeting of the American Otological Society, Inc., will be held at the Marlborough-Blenheim Hotel, Atlantic City, N. J., May 26-27, under the presidency of Dr. George M. Coates, Philadelphia. A military symposium is one feature of the program with the following speakers:

Dr. Harris P. Mosher, Boston, Lessons Learned from the Last War.

Dr. Edmund P. Fowler, New York, Hearing Standards for Acceptance, Disability Rating and Discharge.

Dr. William E. Grove, Milwaukee, Management of Injuries to the Middle and Internal Ear, Including Fractures of the Petrous Bone.

Dr. Douglas Macfarlan, Philadelphia, Prevention and Treatment of Acoustic Trauma in War and Civil Life.

Dr. Eugene R. Lewis, Los Angeles, Malingering and Neuro-Otologic Considerations in Army Service.

Comdr. John R. Poppen, medical corps, U. S. Navy, Washington, D. C., Otologic Problems on Naval Vessels.

**Meeting of Clinical Pathologists.**—The twentieth annual meeting and eighth seminar of the American Society of Clinical Pathologists will be held at the Hotel Cleveland, Cleveland, May 29-June 2, under the presidency of Dr. Armin V. St. George, New York. Among the speakers will be:

Dr. Clara Raven, Youngstown, Ohio, Clinical and Laboratory Diagnosis of Leptospirosis.

Dr. Normand L. Hoerr, Cleveland, Effect of Different Fixing Methods on the Histologic Appearance of Liver and Kidney Cells.

Victor C. Myers, D.Sc., and Alfred H. Free, Ph.D., Cleveland, Clinical Significance of the Enzymatic Activity of Duodenal Contents, with a Practical Method of Recording Values.

Drs. Donald C. Beaver, David J. Sandweiss and Harry C. Saltzstein, Detroit, Effect of Urine Extracts on Healing of Experimental Peptic Ulcers in Dogs.

Drs. Harry Eagle and Joseph Earle Moore, Baltimore, The Confusing Multiplicity of Serologic Tests for Syphilis.

Dr. Harry J. Corper and Maurice L. Cohn, Ph.D., Denver, Effect of Paraffin Hydrocarbons on Tuberculoallergy and Tuberculoimmunity Produced by Tubercle Bacilli.

Dr. Howard T. Karsner, professor of pathology, Western Reserve University School of Medicine, Cleveland, will conduct a seminar, Sunday, on "Tumors of the Endocrine Glands."

Dr. Karsner will lecture on this subject Monday morning, following a clinical pathologic conference conducted by Dr. Harry Goldblatt, professor of experimental pathology at Western Reserve.

**Teachers of Sight-Saving Courses.** — The National Society for the Prevention of Blindness announces that it is again cooperating with several colleges and universities in offering courses for the preparation of teachers and supervisors of sight-saving courses. An elementary course is to be given at Wayne University, Detroit, under the direction of Miss Margaret Soares, June 23 to August 2. An advanced course will be given at Western Reserve University, Cleveland, by Miss Olive S. Peck, June 23 to August 2, and another at State Teachers College, Buffalo, by Mrs. Winifred Hathaway, New York, associate director of the national society, July 7 to August 15. Details may be obtained from the university or college or from the directors of the courses.

**American Laryngological Association.**—The sixty-third annual meeting of the American Laryngological Association will be held at the Marlborough-Blenheim Hotel, Atlantic City, N. J., May 28-30, under the presidency of Dr. Gordon Berry, Worcester, Mass. Papers to be presented include:

Dr. Irwin G. Spiesman, Maywood, Ill., An Experimental and Clinical Study of the Common Cold.
Dr. John A. Kolmer, Philadelphia, Science of Chemotherapy.
Dr. Brien T. King, Seattle, Further Report on the Surgical Treatment of Bilateral Abductor Paralysis.
Dr. Louis H. Clerf, Philadelphia, Paralysis of the Larynx.
Dr. William D. Gill, San Antonio, Texas, Pathogenic Molds and the Lesions They Produce in the Respiratory Tract.

A symposium on bronchiectasis will be presented by Drs. Harry P. Schenck, Simon S. Leopold, Eugene P. Pendergrass, Julian Johnson and Gabriel Tucker, all of Philadelphia.

**Tuberculous Ex-Soldier Missing.**—Physicians are asked to be on watch for Joseph E. Taylor, aged 26, who was discharged from the U. S. Army April 11 at Camp Devens, Mass., after it was found that he had tuberculosis. He had been inducted into the service March 18. He was last seen in the railroad station at Ayer, Mass. It was said that he had bilateral tuberculous lesions and a large cavity in the upper lobe of the right lung. Taylor is 5 feet 7 inches tall, weighs 140 pounds, has blue grey eyes, may be wearing glasses. When last seen he was wearing a dark gray overcoat, light gray sport coat with plain gray trousers and a brown hat. Any one who sees this man is asked to communicate with his sister, Mrs. Austin L. Duffy, 80 Oakdale Street, Lakewood, R. I., the state department of health, Providence, R. I., or the Rhode Island state police.

**Association of Genito-Urinary Surgeons.** — The fifty-third annual meeting of the American Association of Genito-Urinary Surgeons will be held at The Homestead, Hot Springs, Va., May 29-31, under the presidency of Dr. Montague L. Boyd, Atlanta, Ga., who will speak on "Ulcer of the Bladder: An Unusual Ulcer Associated with Streptococcus Faecalis Infection." Included among the speakers will be:

Dr. Albert J. Scholl, Los Angeles, Gunshot Wounds of the Kidney.
Drs. William J. Baker and John I. Brewer, Chicago, Endometriosis of the Urinary Bladder.
Dr. Hugh H. Young, Baltimore, Intravesical Resection of the Bladder Wall and Peritoneal Coat for Certain Bladder Tumors.
Dr. Hermon C. Bumpus Jr., Pasadena, Calif., Cancer of the Prostate: Difficulties in the Evaluation of Treatment.
Drs. Roger C. Graves, Boston, and Knowles B. Lawrence, Wrentham, Mass., Bilateral Embryonal Carcinoma of the Testes.
Drs. Reed M. Nesbit and Robert H. Cummings, Ann Arbor, Mich., Use of Prostigmine in the Management of Postoperative Urinary Retention.

**American Gynecological Society.**—The sixty-sixth annual meeting of the American Gynecological Society will be held at the Broadmoor Hotel, Colorado Springs, Colo., May 26-28, under the presidency of Dr. Jennings C. Litzenberg, Minneapolis. Among the speakers will be:

Dr. Leighton C. Conn, Edmonton, Alta., A Critical Review of Blood Loss in 2,000 Obstetrical Cases.
Dr. Robert D. Mussey, Rochester, Minn., Pelvic Pain.
Dr. Norman R. Kretzschmar, Ann Arbor, Mich., Intrauterine Oxygen Exchange.
Dr. Norman Harris Williams, Beverly Hills, Calif., Varied Significance of Heartburn of Pregnancy.
Dr. Henry Close Hesseltine, Chicago, Vitamin Therapy in Vulvar Dermatoses.
Dr. Charles H. Peckham Jr., Cooperstown, N. Y., Time of Onset and Duration of the Toxemias of Late Pregnancy in Relation to the Development of Permanent Vascular Change.
Dr. Henry E. Sigerist, Baltimore, Development and Trends in Gynecology.
Dr. Francis L. McPhail, Great Falls, Mont., The Cause and Possible Late Effect of Anoxia in the Newborn.
Dr. Carl E. Bachman, Philadelphia, Application of Chemical Methods to Studies of the Excretion of Estrogens During Pregnancy.

## CORRECTION

**Skin Peeling and Scarification.**—Following publication in THE JOURNAL, March 8, of the article by Eller and Wolff on skin peeling, a number of letters were received protesting that the photographs were misleading. Most of these letters asserted that the photographer had utilized light effects which emphasized unduly in the "before" pictures the shadows made by pits, scars and discolorations and which minimized the cosmetic defects in the "after" pictures. Such letters were received from:

Dr. S. Miles Bouton Jr., Albany, N. Y.
Dr. Eugene A. Field, Providence, R. I.
Dr. L. Henry Garland, San Francisco.
Dr. Hans W. Liepmann, Monroe, N. Y.
Dr. Ira C. Nichols, Providence, R. I.
Dr. Carl C. Pfeiffer, Detroit.
Dr. Joshua Schwartz, New York.
Dr. William B. Swarts, Greenwich, Conn.
Dr. L. P. Tischler, Schenectady, N. Y.
Dr. Stanley R. Truman, Oakland, Calif.
Dr. H. P. Worstell, Columbus, Ohio.

These letters were sent to the author, Dr. Joseph J. Eller, asking for a statement. The author, in turn, referred the letters to the professional photographer, Mr. Martin Haggett, 220 West Forty-Second Street, New York. Mr. Haggett stated that the biggest offender was the engraver who prepared the halftones. "For he evidently washed out in etching or in too light a negative any detail that should have been retained from the original print. . . . The lesser offender is myself, who did all the photography, except the one used as figure 3." Mr. Haggett then carefully analyzed the lighting effects secured in each of the illustrations.

The explanations and statements of Mr. Haggett were referred to the Wallace-Miller Company, 466 West Superior Street, Chicago, the photo engravers who prepared the halftones. The engraver writes: "I find the halftones have been overetched and I wish I had seen the proofs before they were printed. I have been away and did not see the job until now.

"We have been making halftones for you for many years and this is the first time we have made this mistake. I am sorry it happened and I will assure you it won't happen again."

# *Government Services*

### The Army Medical Library

A contract for preliminary sketches and planning, including the selection of a site, has been awarded to Eggers & Higgins, New York, for the Army Medical Library and Museum, Washington, D. C., the estimated cost of which will be $3,750,000.

### Commissions in Public Health Service

The following physicians have been commissioned as assistant surgeons in the regular corps, U. S. Public Health Service, effective February 1, terminating their commissions in the same rank in the reserve:

Clarence K. Aldrich, New York.
Robert D. Berkebile, Memphis, Tenn.
Roy E. Wolfe, Galveston, Texas.
John G. Crawford, Baltimore.
Paul W. Lucas, Baltimore.
Evert A. Swensson, New Orleans.
Vernon W. Foster, Boston.

### Examination for Interns in the Navy

The surgeon general of the navy recently announced that a large number of appointments as acting assistant surgeon for intern training in naval hospitals are being offered. Examinations for these appointments will be held June 23-26, inclusive, at all the larger naval hospitals in the continental limits of the United States. Applications for authorization for these examinations should be forwarded before May 23 to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C. Applicants must be citizens of the United States over the age of 21 but less than 32 at the time of acceptance of the appointment; must be graduates or members of the graduating class of recognized medical schools and must meet the physical and other requirements. Other information may be obtained from the Bureau of Medicine and Surgery.

# Foreign Letters

## LONDON

*(From Our Regular Correspondent)*

March 8, 1941.

### Health in Factories as Good as Before the War

It has previously been reported in THE JOURNAL that the general health of our people has not suffered in consequence of the war. This is confirmed by the latest official returns. It was feared that, as typhoid is water borne, the damage of drains by bombing would increase it. But its incidence, as well as that of the other common infectious diseases, is below normal. Actually there were only 32 cases of typhoid up to February 8 this year, 1 more than for the same period last year, but only a third of those for 1939 and half those for 1938. The government's attention to health in factories has been well rewarded. The provision of canteens in and out of factories, the reduction of the long hours in the first year of the war and the development of medical services have kept the workers in good condition. It was feared that the congregating of people in air raid shelters would spread disease. But disease has diminished; it seems that the result is a self-immunizing effect. Moreover, when illness does occur it is attended to much more quickly, in many cases, than if the person had been leading the ordinary home life, because of the medical service organized for the shelters. Nor has evacuation to the country spread disease, as some physicians predicted. The official figures for the period up to February 8 and for the 20,000,000 persons inhabiting London and the other large cities show that 1941 is below the average of the preceding three years.

*Incidence of Influenza, Scarlet Fever and Diphtheria*

| | Cases | Deaths |
|---|---|---|
| Influenza | | |
| 1941 | 778 | |
| 1940 | 1,827 | |
| 1939 | 1,309 | |
| 1938 | 407 | |
| Scarlet Fever | | |
| 1941 | 3,568 | 12 |
| 1940 | 2,689 | 12 |
| 1939 | 4,788 | 10 |
| 1938 | 7,701 | 31 |
| Diphtheria | | |
| 1941 | 3,787 | 244 |
| 1940 | 2,053 | 129 |
| 1939 | 3,563 | 156 |
| 1938 | 6,224 | 236 |

### The Bread Controversy

The rationing of food has brought the question of nutrition to the front, and bread is again a matter of controversy. The tide has set in favor of wholemeal bread. It is being recognized how large is the loss in the removal of the germ and husk from the wheat berry. The government has ordered the addition of vitamin $B_1$ and calcium to the white loaf. But critics say that this is only a partial restoration. White bread is wanting in the other elements of the B complex, in iron and in other salts. Why allow valuable ingredients to be removed and then go to the trouble and expense of restoring only some of them? The government has therefore also ordered the production of a standard flour of 85 per cent extraction from the wheat berry (instead of the 73 per cent for white flour). Experts have advised that this percentage gives the maximum of digestibility and nutriment. But other experts declare that the 15 per cent removed in making the new flour contains the germ and its vitamins and that the bran removed contains mineral salts and gluten. The government is therefore considering the production of flour of 100 per cent extraction. This would be a true wholemeal flour—a thing unknown. The view of many dietitians is that extraction of the husk from the wheat berry is desirable because of its indigestibility, but they have not attempted to justify the extraction of the germ. Moreover, the need for "roughage" in our food, as a preventive of constipation, is admitted.

The government proposes that the new bread, of 85 per cent extraction, will be on sale everywhere at the same price as white bread, 16 cents the 4 pound loaf. Special breads containing more fat, which are popular in the North, may be sold at a higher price. The decision to produce the standard loaf was taken because it was found that a substantial proportion of the population wanted it. The existing brown bread on sale differs much in the degree of extraction—a point overlooked in the controversy between white and brown bread, the latter being often assumed to be equivalent to "wholemeal bread."

### Canadian Red Cross Supplies

The first annual report of the Canadian Red Cross in England states that several millions of pounds were presented to the Dominion and British forces and bombed civilians during the year. More than 350,000 hand knitted woolen comforts from homes in every part of the dominion were distributed to Canadian troops and airmen in England, to British and Canadian naval men and to merchant marine organizations. These included knitted blankets from the far west, bags for patients' belongings, bed jackets, a million pairs of socks, 42,000 towels, 500,000 handkerchiefs and 500,000 bandages. In addition large quantities of hospital supplies were sent to British, French and Polish organizations. There were also 154 ambulances (one presented by a New York citizen), 10,000 shaving sticks, 10,000 mirrors, 4,000 tooth brushes and 112 radio sets. Food supplies included 80,500 cans of mixed fruits, vegetables, meats and fish, 21,600 cans of corn, 47,000 cans of jam, 14,800 cans of butter, 40,000 cans of sardines, 85,000 pounds of sugar and 26,775 pounds of prunes. A large part of the food was distributed by organizations attending to bombed civilians and the remainder has been stored for future emergency use of military hospitals. All these supplies were sent from Canada to England in 85,000 cases, of which only 1,800 were lost by enemy action.

### The Influenza Epidemic

The fear that war might produce some increase of epidemic diseases has not been realized. In the early part of the year we expect an epidemic of influenza, which has now occurred. It is mild, as shown by the age distribution of the deaths, a large proportion of which are of persons over the age of 65 years. This is in striking contrast with the influenza pandemic of 1918, which marked the close of the last great war, when most of the victims were young and no treatment seemed availing against the malignant form of bronchopneumonia which was rife. The figures for the total weekly deaths attributed to influenza in the one hundred and twenty-six large cities were, for the four weeks ended February 8, respectively 99, 120, 176 and 261. The available London figures of hospital admissions suggest that we have already passed the maximum period of the epidemic.

### Further Extension of the Medical Register

In a previous letter, the extension of the Medical Register which enables Canadian and United States physicians to register for the duration of the war was reported. A further extension is now announced. It extends this permission to physicians qualified in any part of the British Empire, in the countries of our European allies or in Germany or Italy. Under this order the physician must be selected either for a medical commission in one of the fighting forces or for employment in a hospital, institution or service not involving attention in the patient's own home.

## ITALY

*(From Our Regular Correspondent)*

Feb. 15, 1941.

### International Radiomedical Center

The board of directors of the International Radiomedical Center recently presented the annual report. There were ninety-two radiomedical calls from steamers on voyages, seventy-two being for medical diseases, nine for surgical diseases and eleven for accidents. In grave conditions the consulting center directed care of the patients all through the course of the disease until they were completely cured or until they were disembarked and sent to hospitals. The Italian Radiomedical Center had the majority of calls during the year, ninety-two; France had twenty-two, England seventeen and Belgium five.

### Tumors of the Lung

At a meeting of the Società di Chirurgia of Naples, Professor Rizzi discussed carcinoma of the lung. In 1 of 3 cases reported, the carcinoma of the upper lobe was composed of flat epithelium with epithelial pearls and marginal sclerosis. In another case the diagnosis was made by means of a biopsy of an inguinal metastasis which showed carcinoma with polygonal epithelium with foamy clear cells. Macroscopically, tumors of the lung may be single or multiple, massive, pleuropulmonary and cirrhotic. The microscopic classification is difficult, as it depends on the various types of cells (cylindricobronchial, cubicobronchial, fat alveolar and mucous glandular) in the lung. Morphologically there are four types of tumors: (1) those with undifferentiated small cells, (2) those with cornified or uncornified flat cells, (3) those with cylindric cells and (4) those with polyform cells. In the cases reported by the speaker, diffusion took place by contiguity: without involvement of the pulmonary lymphatic routes in the first case, limited in the sclerotic cavity of the lung in the second and diffused from an apical node to the involved lung in the third case. Apical sclerosis plays an important part in the development and evolution of pulmonary tumors. It blocks the territorial lymphatic circulation on the one hand and stimulates production of the tumor on the other.

### Anthropologic Identifications

Prof. Lido Cipriani, head of the Museo Antropologico of the University of Florence, made observations on the bones of Pico della Mirandola and Angelo Ambrogini, known in literary annals as Angelo Poliziano, which are preserved in the San Marco Church of Florence. [Pico della Mirandola, Italian philosopher and writer and Angelo Poliziano, Italian scholar and poet, both died in 1494.] He observed that the cranium of Pico della Mirandola showed abnormalities which may explain Pico's remarkable intelligence and extraordinary memory. The right half of the coronal suture was abnormal. The sagittal suture presents signs of an early ossification. Examination of the cranium and the skeleton suggested that endocrine dysfunction may have influenced the development of the body to a high degree. The tomb of Poliziano, which is about 2 meters deep, contained bits of a wooden box and some fragile bones. Examination of the bones suggested that Poliziano was short in stature and that the body inclined toward the left as a result of abnormal development of the facets of the cervical vertebras. The cranium was very large. The face was long and the nose was large. The neck and nose were slightly deformed.

### Experiments on Esophageal Dilatation

In a lecture at the surgical clinic of the University of Sassari, Prof. Mario Agrifoglio reported experiments on sympathetic dystonia of some segments of the digestive tract. The author studied the pathogenic mechanism of idiopathic dilatation of the esophagus. There is the opinion that megaesophagus is due to spasm of the cardia; there are other theories. Professor Agrifoglio induced, in dogs, esophageal idiopathic dilatation by decortication of the cardial segment of the esophagus without injury to the main pneumogastric trunks. The functional esophageal changes depend on dysfunction of the nerves which supply the esophagus. The functions of the sympathetic nerves which regulate the muscular tonus of the smooth fibers of the tunic of the lower wall of the esophagus are predominantly involved. Those of the vagal nerves are secondarily involved, as observed by the behavior of the peristaltic waves, which slowly cross the esophagus down to the cardia and appear to be shallow.

From these experiments the speaker believes that grave diffuse dilatation of the esophagus originates in a dysfunction of the sympathetic tonicity as the primary factor, and a functional imbalance of the peripheral visceral nervous segments as a secondary factor. Because the intrinsic and extrinsic nerve supply of the large intestine is analogous to that of the esophagus, the speaker repeated these experiments on a segment of the colon with the aim of producing megacolon. However, it could not be reproduced, as even slight decortication of the sympathetic nerves to the colon caused an immediate and persistent diminution of the lumen of the intestinal segment from contracture of the muscular tunic of the colon. These experiments help to explain postoperative intestinal occlusion.

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## *Marriages*

WILLIAM LOUIS JANUS, Lieut. (j. g.) M. C., U. S. Navy, Swedesboro, N. J., to Miss Dorothy Taylor Alexander of Kennett Square, Pa., at Waikiki, Hawaii, February 5.

NATHANIEL WHITE KUYKENDALL JR., Memphis, Tenn., to Miss Sara Pauline Williamson of Water Valley, Miss., in Osceola, Ark., January 31.

THOMAS LEONARD WATSON, Charlottesville, Va., to Miss Elizabeth Baumeister of Portsmouth in December 1940.

HERMAN FRANKLIN EASOM, Sanatorium, N. C., to Miss Kathryn Amanda Scroggs of Raleigh in December 1940.

ZACHARY FILLMORE LONG to Miss Virginia Fay Cox, both of Rockingham, N. C., at High Point, February 1.

RALPH CONNER REID, Charlotte, N. C., to Miss Nancy Lanier of New York at Greenwich, Conn., January 1.

FRED BRINNING ROACHE, Owensboro, Ky., to Miss Martha Vivian Whitehouse in December 1940.

LEWIS B. HUNTER, Wallace, Idaho, to Miss Willadene Berberet of Spokane, Wash., February 8.

GEORGE BARKSDALE CRADDOCK to Miss Mary Spencer Jack, both of Lynchburg, Va., February 1.

L. RAGAN LONNERGAN JR. to Miss Dorothy Liles, both of Gadsden, Ala., in December 1940.

TRUMAN WALTER WHITFIELD JR., Jasper, Ga., to Miss Mozell Creech in Atlanta, February 9.

LEE E. BRANSFORD JR. to Miss Edna Earle Hobbs, both of Jacksonville, Fla., February 8.

PHILIP BERNARD BLEECKER to Miss June Boyer, both of Memphis, Tenn., February 8.

BEVERLY KENNON PETER to Miss Mary Shanklin, both of Beckley, W. Va., February 8.

CLYDE A. SMITH to Miss Mary Caperton Banks, both of Beckley, W. Va., February 8.

PRENTISS BAILEY, Montgomery, Ala., to Miss Edith Larrabee of Chicago, January 29.

ALEX E. FAIRSHTER, Brookport, Ill., to Miss Jeanne Gorman in Philadelphia, February 4.

JAMES J. REDMOND to Miss Frances Ann Peck, both of Cedar Rapids, Iowa, February 5.

LOUIS ERIC MARSHALL to Miss Helen Brandt, both of New York, February 23.

CHARLES N. EARL, Portland, Ore., to Miss Betty Vogel of Union, January 4.

HENRY ROSS, New York, to Miss Glenda Farrell in Passaic, N. J., in January.

HAROLD S. FRIEDMAN to DR. MARY ZELDES, both of Chicago, Feb. 1, 1939.

# Deaths

**Henry Larned Keith Shaw** ✦ Albany, N. Y.; Albany Medical College, 1896; instructor in diseases of children from 1899 to 1903, lecturer from 1903 to 1906, clinical professor of pediatrics from 1906 to 1938 and since 1938 professor of pediatrics at his alma mater; consulting pediatrician, New York State Department of Health, from 1912 to 1914; in the latter year organized its division of child hygiene, of which he was director until 1919; since that time had continued his association with the department in an advisory capacity and for many years had been consultant in child hygiene; was a member of its advisory committee on maternal and child welfare; past president of the American Pediatric Society and the American Child Hygiene Association; member of the American Academy of Pediatrics; in 1906 a delegate to the International Medical Congress in Lisbon, Portugal; medical examiner for the American Board of Pediatrics; served during the World War; attending to the pediatrician, Albany Hospital; medical director of the St. Margaret's House and Hospital; consulting pediatrician to the Little Falls (N. Y.) Hospital, Brady Memorial Hospital, Albany, Glens Falls (N. Y.) Hospital, Vassar Brothers Hospital, Poughkeepsie Memorial Hospital of Greene County, Catskill, and the Mary McClellan Hospital, Cambridge; author of "Communicable Diseases in Children"; translator of Pfaundler and Schlossman's "Diseases of Children"; aged 67; died, March 26, of coronary thrombosis.

**John Larrabee Pomeroy,** Los Angeles; Hospital College of Medicine, Louisville, Ky., 1903; University and Bellevue Hospital Medical College, New York, 1909; member of the California Medical Association; professor of public health and preventive medicine at the College of Medical Evangelists; assistant surgeon in the United States Army from 1907 to 1909; served during the World War; past president of the Western Branch of the American Public Health Association; was a director of the Los Angeles County Tuberculosis Association; for many years health officer of Los Angeles; in 1934 was awarded the Peter Ling Award by the American Public Health Association; aged 57; died, March 24, in the California Lutheran Hospital of chronic nephritis.

**Collier Ford Martin** ✦ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1900; professor and vice dean of proctology at the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; formerly professor of proctology at the Temple University School of Medicine; member of the American Proctologic Society; fellow of the American College of Surgeons; served during the World War; aged 68; died, March 22, in the Graduate Hospital, of diabetes mellitus and acute hepatic insufficiency.

**Henry Garnsey Ohls** ✦ Chicago; Rush Medical College, Chicago, 1887; served for many years as assistant chief of the bureau of vital statistics, Chicago Department of Health; in 1909 became a member of the editorial staff of the *Illinois Medical Journal* and four years later was named its managing editor, which position he held for twenty-eight years; aged 80; died suddenly, March 17, of coronary thrombosis.

**Leo Handel Neuman** ✦ Albany, N. Y.; Albany Medical College, 1892; member of the American Gastro-Enterological Association; professor of gastroenteric diseases and clinical professor of theory and practice of medicine at his alma mater in 1908; on the staff of the Albany Hospital from 1908 to 1919; aged 72; died, March 15, of mesenteric thrombosis.

**Andrew James Gilmour** ✦ New York; Columbia University College of Physicians and Surgeons, New York, 1899; aged 70; consulting dermatologist, Englewood (N. J.) Hospital; at various times on the staffs of the Manhattan State Hospital and the New York Hospital, where he died, March 9, of arteriosclerosis and heart disease.

**Leroy K. Leslie,** Bareville, Pa.; Jefferson Medical College of Philadelphia, 1889; member of the Medical Society of the State of Pennsylvania; past president of the Lancaster County Medical Society; deputy coroner in Upper Leacock and Leacock townships and for many years registrar of vital statistics; aged 79; died, February 26.

**Samuel Alfred Beddall,** Beacon, N. Y.; University of Louisville (Ky.) Medical Department, 1917; member of the Medical Society of the State of New York; served during the World War; on the staff of the Veterans Administration Facility, Castle Point; aged 47; was asphyxiated, March 9, by illuminating gas.

**William Joseph Anderson,** Chicago; Chicago Homeopathic Medical College, 1898; Rush Medical College, Chicago, 1903; fellow of the American College of Surgeons; past president of the Dickinson County (Mich.) Medical Society; aged 64; died in February at the Veterans Administration Facility, Hines, Ill.

**Harmon Talley Rhoads Sr.** ✦ Everett, Wash.; University Medical College of Kansas City, Mo., 1910; fellow of the American College of Surgeons; past president of the Medical Association of Montana; on the staffs of the General Hospital and the Providence Hospital; aged 61; died, February 6.

**Anna Gove Richardson,** Lakeville, Mass.; Woman's Medical College of Pennsylvania, Philadelphia, 1891; member of the Massachusetts Medical Society; fellow of the American College of Surgeons; for many years on the staff of the Vincent Memorial Hospital, Boston; aged 79; died, February 1.

**Emmet Bernard Anderson,** Americus, Ga.; Atlanta Medical College, 1916; member of the Southeastern Surgical Congress; fellow of the American College of Surgeons; served during the World War; visiting surgeon, Americus and Sumter County Hospital; aged 48; died, February 21.

**Crittenden Joyes,** Fort Worth, Texas; University of Louisville (Ky.) Medical Department, 1892; fellow of the American College of Surgeons; on the staffs of the Methodist and All Saints hospitals and St. Joseph's Infirmary; aged 71; died, March 23, of coronary occlusion.

**John Henry Fenelon** ✦ Bloomington, Ill.; Rush Medical College, Chicago, 1889; past president of the McLean County Medical Society; aged 76; on the staffs of the Mennonite Hospital and St. Joseph's Hospital, where he died, March 3, of uremia and myocarditis.

**Milton Stanton Ireland,** Atlantic City, N. J.; Jefferson Medical College of Philadelphia, 1902; formerly on the staff of the Atlantic City Hospital; at one time a member of the board of education; aged 60; died, March 1, in Philadelphia of coronary thrombosis.

**John B. Fleet,** New Franklin, Mo.; American Medical College, St. Louis, 1887; member of the Missouri State Medical Association; formerly mayor; aged 79; died, March 16, in Portland, Ore., of acute coronary thrombosis, myocarditis and arteriosclerosis.

**James Love Collins** ✦ Turlock, Calif.; St. Louis College of Physicians and Surgeons, 1909; veteran of the Spanish-American and World wars; at one time president of the school board and board of health of Sheffield, Iowa; aged 65; died, February 1.

**Thomas F. Robertson,** Brockville, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1891; was chairman of the public utilities commission in Brockville several times and senior coroner for Leeds County; aged 71; died, January 29.

**Hiram B. Russell,** Sheffield, Pa.; Western Reserve University Medical Department, Cleveland, 1890; member of the Medical Society of the State of Pennsylvania; past president of the Warren County Medical Society; aged 73; died, February 19.

**Charles Mark Brookings,** Du Quoin, Ill.; Missouri Medical College, St. Louis, 1898; member of the Illinois State Medical Society; aged 72; on the staff of the Marshall Browning Hospital, where he died, March 9, of arteriosclerosis and uremia.

**Robert Reeve Dockweiler,** Los Angeles; Harvard Medical School, Boston, 1933; member of the California Medical Association; on the staffs of the Presbyterian and St. Vincent's hospitals; aged 34; died, February 21, of carcinoma of the left kidney.

**Carl Ellsworth Evans** ✦ Newark, Ohio; Ohio Medical University, Columbus, 1903; fellow of the American College of Surgeons; on the staff of the Newark City Hospital; aged 61; died, February 26, in Ocala, Fla., of a self-inflicted bullet wound.

**Henry Buchanan Fuston** ✦ Bokchito, Okla.; University of Nashville (Tenn.) Medical Department, 1909; formerly county health officer; past president of the Bryan County Medical Society; aged 55; died, February 22, in a hospital at Durant.

**Adolph Zeh,** New York; College of Physicians and Surgeons, medical department of Columbia College, New York, 1887; member of the Medical Society of the State of New York; aged 77; died, February 24, of arteriosclerotic heart disease.

**William Prewett Parks,** Hot Springs National Park, Ark.; Hospital College of Medicine, Louisville, Ky., 1896; past president of the state board of health; at one time mayor of Mena; aged 67; died, February 7, in a hospital at Fort Smith.

**Jose M. Rodriguez,** Alpine, Texas; Universidad Nacional Facultad de Medicina, Mexico, D. F., 1898; aged 70; died, February 15, in a hospital at San Antonio of incarcerated inguinal hernia with perforation of the ileum and peritonitis.

**De Witt Clinton MacClymont** ✦ Northport, N. Y.; Bellevue Hospital Medical College, New York, 1897; on the staff of the Huntington (N. Y.) Hospital; aged 65; died, February 17, of chronic myocarditis and cirrhosis of the liver.

**Sidney Norman Gholsen,** Waynesboro, Va.; University of Cincinnati College of Medicine, 1935; captain in the medical reserve corps of the United States Army; aged 28; was killed, February 28, in an automobile accident near Fort Meade, Md.

**John Edward Herrity,** New York; Yale University School of Medicine, New Haven, Conn., 1897; member of the Medical Society of the State of New York; for many years city medical examiner; aged 65; died, February 17, in Southern Pines, N. C.

**Edgar McMillen Ickes,** Fremont, Ohio; Western Reserve University School of Medicine, Cleveland, 1901; for many years on the staff of the Memorial Hospital of Sandusky County; aged 66; died, February 21, of cerebral hemorrhage.

**Joseph Harold Ralston,** Cleveland; University of Wooster Medical Department, Cleveland, 1913; member of the Ohio State Medical Association; served during the World War; aged 54; died, February 12, of carbon monoxide poisoning.

**Cullen Bryant Wilson,** Sarasota, Fla.; Medical College of Alabama, Mobile, 1906; member of the Florida Medical Association; aged 62; died, February 24, in a hospital at Tampa of chronic nephritis and hypertensive heart disease.

**James P. Marsh,** Troy, N. Y.; Albany Medical College, 1885; fellow of the American College of Surgeons; consulting surgeon, Samaritan and Leonard hospitals; aged 78; died, February 23, of pulmonary thrombosis following influenza.

**Oscar Rudolph Engelmann** ✦ St. Louis; Washington University School of Medicine, St. Louis, 1906; served during the World War; aged 56; died, March 8, in the Deaconess Hospital of mitral insufficiency and cirrhosis of the liver.

**Benjamin Griswold Webb,** Andrews, N. C.; Louisville (Ky.) Medical College, 1885; member of the Medical Society of the State of North Carolina; aged 78; died, February 9, of acute cardiac dilatation and chronic interstitial nephritis.

**Byron Lee Arthur,** Lindale, Texas; University of Louisville (Ky.) Medical Department, 1896; member of the State Medical Association of Texas; aged 67; died, March 7, in the Mother Frances Hospital, Tyler, of coronary occlusion.

**William Lee Clark,** Harrisburg, Pa.; Johns Hopkins University School of Medicine, Baltimore, 1923; member of the Medical Society of the State of Pennsylvania; aged 44; was found dead, February 28, of an overdose of a sedative.

**Isaac Marion Huskey,** Cave City, Ark. (licensed in Arkansas in 1903); member of the Arkansas Medical Society; past president of the Independence County Medical Society; aged 59; died, February 26, of coronary occlusion.

**Samuel Ford Talbott,** Morgantown, W. Va.; University of Cincinnati College of Medicine, 1921; member of the West Virginia State Medical Association; aged 51; died, February 24, in the City Hospital of cerebral hemorrhage.

**Moses Hoge Tredway,** Emporia, Va.; Maryland Medical College, Baltimore, 1911; member of the Medical Society of Virginia; aged 54; died, February 8, in the Stuart Circle Hospital, Richmond, of diverticulitis and pneumonia.

**Edwin Lyle Campbell,** Superior, Wis.; University of Colorado School of Medicine, Denver, 1934; member of the State Medical Society of Wisconsin; aged 32; died, February 14, of ruptured aneurysm of the circle of Willis.

**George Calder Dunlevy** ✦ Evansville, Ind.; New York Homeopathic Medical College and Hospital, New York, 1890; for many years on the staff of the Deaconess Hospital; aged 72; died, March 19, of carcinoma of the larynx.

**Charles Wesley Pettit** ✦ Minneapolis; University of Minnesota College of Medicine and Surgery, Minneapolis, 1903; an Affiliate Fellow of the American Medical Association; aged 63; died, February 25, in St. Mary's Hospital.

**Compton Ney Crook,** Moscow, Tenn.; Memphis (Tenn.) Hospital Medical College, 1904; served during the World War; aged 61; died, March 12, in the Veterans Administration Facility, Memphis, of carcinoma of the larynx.

**Franklin Lafayette Warren** ✦ Bridgewater, Mass.; University of Pennsylvania Department of Medicine, Philadelphia, 1899; aged 69; died, February 11, in the New England Baptist Hospital, Boston, of carcinoma of the rectum.

**George Albert Baker,** Hardin, Mont.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1908; member of the Medical Association of Montana; served during the World War; aged 61; died, February 3.

**James Jernigan Crumbley,** Sylvester, Ga.; Vanderbilt University School of Medicine, Nashville, Tenn., 1914; member of the Medical Association of Georgia; served during the World War; aged 53; died, February 17.

**Carleton Shurtleff Francis,** Brookline, Mass.; Harvard Medical School, Boston, 1892; member of the Massachusetts Medical Society; aged 74; died, March 8, at Kerrville, Texas, of arteriosclerosis and coronary occlusion.

**William Andrew Jackson,** Monteagle, Tenn.; College of Physicians and Surgeons, Baltimore, 1896; member of the Tennessee State Medical Association; aged 77; died, March 9, of myocarditis and aortic regurgitation.

**Emerson Ellwood Darlington** ✦ New Bloomfield, Pa.; Maryland Medical College, Baltimore, 1900; formerly on the staff of the Polyclinic Hospital, Harrisburg; aged 66; died, March 16, of coronary disease.

**William Almon Werner,** Niles, Ohio; Western Reserve University Medical Department, Cleveland, 1885; for many years city health commissioner; aged 84; died, February 15, of arterial thrombosis.

**Sidney Fitzhugh Mioton,** New Orleans; Tulane University of Louisiana School of Medicine, New Orleans, 1895; aged 66; died, February 9, of injuries received in an automobile accident.

**Hugo Robert Chaloupka,** Los Angeles; John A. Creighton Medical College, Omaha, 1911; member of the California Medical Association; aged 53; died, February 20, of coronary thrombosis.

**John Martin Dumm,** Mackeyville, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1878; aged 87; died, March 8, in the Lockhaven (Pa.) Hospital of pneumonia.

**Samuel Wesley Mellott,** Woodstock, Va.; Howard University College of Medicine, Washington, D. C., 1897; aged 79; died, February 15, in the Cora Miller Memorial Hospital of uremia.

**George W. Combs,** Indianapolis; Medical College of Indiana, Indianapolis, 1884; member of the Indiana State Medical Association; aged 81; died, February 8, in the Methodist Hospital.

**Edward Ford,** Parma, Mo.; Barnes Medical College, St. Louis, 1905; aged 65; died, March 18, in the Veterans Administration Facility, Jefferson Barracks, of coronary arteriosclerosis.

**George Emmett Bell,** Montclair, N. J.; Howard University College of Medicine, Washington, D. C., 1920; aged 49; died, March 31, in New Rochelle, N. Y., of chronic myocarditis.

**George Francis Woodruff,** Joliet, Ill.; Reliance Medical College, Chicago, 1909; aged 75; formerly on the staff of the Silver Cross Hospital, where he died, February 16, of lung abscess.

**LeRoy Pope Walker,** Middle Haddam, Conn.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1878; aged 86; died, February 4, of pneumonia.

**Charles Henry Nicholas Heffron** ✦ Adrian, Mich.; University of Wooster Medical Department, Cleveland, 1893; aged 70; died, March 22, of intestinal obstruction due to duodenal ulcer.

**Franklin Albert Butterfield,** Oregon, Ill.; Rush Medical College, Chicago, 1880; member of the Illinois State Medical Society; aged 86; died, February 17, in a hospital at Freeport.

**James Skene Campbell,** Lebanon, Tenn.; Vanderbilt University School of Medicine, Nashville, 1888; member of the Tennessee State Medical Association; aged 77; died, February 3.

**Mary Glover Thompson Lowrey,** Berkeley, Calif.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1886; aged 84; died, March 2.

**Philip A. Brown,** Poe, W. Va.; Kentucky School of Medicine, Louisville, 1894; aged 83; died, February 27, of heart disease.

# Bureau of Investigation

## SWINDLERS' SWAG—$200,000

### Mexicans Use Old Spanish Scheme to Gyp Physicians and Others

A procedure used in an attempt to mulct leading citizens of the United States of considerable quantities of money is frequently called "The Spanish Prisoner Swindle." It has been mentioned previously in THE JOURNAL, most recently under "General Medical News," Feb. 3, 1940, page 423.

Now comes a recrudescence of the letters. They are so similar in every respect to all their predecessors, even as to the amount of money involved, that there can be no question about their common general origin.

Reproduced herewith is one such letter that was received by a Chicago physician:

Mexico City, Feb. 25, 1941.

Dr. W. C.,
3 Sheridan Rd.,
Chicago, Ill.

Dear Sir:

A person who knows you and who has spoken very highly about you has made me trust you a very delicate matter on which depends the entire future of my dear daughter, as well as my very existence.

I am in Prison sentenced for bankruptcy, and I wish to know if you are willing to help me to save the sum of $285,000.00. U. S. Cy, which I have in Bank bills hidden in a secret compartment of a trunk that is now deposited in a customhouse in the United States.

As soon as I send you some undeniable evidence it is necessary for you to come and pay the expenses incurred in connection with my process, so the embargo on my suit-cases can be lifted. One of these suit-cases conteins a baggage check that was given to me at the time of checking my trunk for North America; this trunk contains the sum above mentioned.

To compensate all your troubles I will give you the THIRD PART OF THE SAID SUM.

Fearing that this letter may not come to your hands, I will not sign my name until I hear from you and then I will entrust you with my whole secret. For the time being I am only signing "R."

Due to serious reasons of which you will know later, please reply via AIR MAIL or WIRE. I beg you to treat this matter with the most absolute reserve and discretion.

Due to the fact that I am in charge of the Prison school I can write you like this and entirely at liberty.

I cannot receive your reply directly in this Prison, so in case you accept my proposition, please air-mail your letter to a person of my entire trust who will deliver it to me safely and rapidly. This is his name and address.

Miguel Ordoñez.
Humboldt 22.-
Mexico, City.- "R."

The signatures on these letters vary extensively. In view of the present influx of such letters in the United States, attention is called at this time to a press release issued by the Post Office Department last August. This release states that Camilo Lopez Vasquez, Jose Gonzalez Vasquez, Jose Barron Meza, Manuel Gomez and Maria De Rosos were all indicted after the evidence in regard to this international confidence game known as the "Spanish Prisoner swindle" was presented to the grand jury by United States Attorney Frank J. Hennessy. The Post Office Department has received as many as seven hundred complaints a month regarding this type of swindle, and such complaints come from every state in the Union.

Because of the increasing number of victims, every effort was made to stamp out this type of fraud, both by criminal prosecution and by general publicity. This swindle is of ancient origin.

If the addressee responds, he is induced by further correspondence to come to Mexico and bring with him approximately $3,600, the amount of money needed to "lift the embargo" mentioned in the first letter. On his arrival in Mexico, the victim is met by swindlers and is thereafter quickly relieved of his funds by trickery or, if necessary, by physical force, according to the Post Office Department release.

It is the opinion of the Post Office Department that the phenomenal success of the existing operations is doubtless accounted for by the nearness of Mexico and its easy accessibility to American citizens. It is estimated that within a year and a half up to August 1940 individuals operating out of Mexico have swindled citizens of this country of approximately $200,000. The Department of Justice and the Post Office Department urge the cooperation of all citizens in eradicating this fraud and request that any one receiving a Spanish swindle letter bring it to the attention of the Department of Justice or the Post Office Department. At various periods in the past few years those engaging in these activities have given special attention to the physicians of this nation. At present they seem to be repeating this procedure, and it is hoped that this warning will serve to place all such communications in the hands of the proper authorities.

## "ELECTREAT MECHANICAL HEART" MISBRANDED

### Government Agency Considers Peoria Gadget

The Federal Food and Drug Administration recently completed successful court proceedings against the Electreat Manufacturing Company of Peoria, Ill., which manufactures and distributes a small electrical gadget which it called a "mechanical heart." This was the first proceeding against an electrical device under the new Federal Food, Drugs and Cosmetic Act.

The trial was held in Kansas City, Mo., in the District Court of the United States with District Judge J. C. Collet presiding. Assistant United States Attorneys Charles King and Charles F. Lamkin Jr. presented a formidable array of experts to refute the contention of the manufacturer, C. W. Kent, that the queer machine was valuable in the treatment of many diseases such as "headache, neuralgia, sinus congestion, neuritis, sore throat, weak lungs, athletic strains, lumbago, rheumatism, gout, indigestion, constipation, piles, sexual weakness, enlarged prostate, paralysis, deafness, tooth ache, catarrh, broken bones, hardening of arteries, cramps of calf and nervousness," to mention but a few. It was also claimed that the device could be used "to enlarge bust or increase the flow of milk."

The Kansas City *Star* of Tuesday, Jan. 28, 1941 reported: "A queer gadget with a big name and an imposing list of human benefits claimed for it was being called bad names and its value questioned today by doctors and lawyers in the federal court of Judge John Caskie Collet. . . . Out of the contrast between the gadget and the claims for it the government seeks to build a case that will bar interstate shipment as a violation of the Federal Food and Drug Act because of mislabeling and misbranding.

"The 'heart' is manufactured at Peoria, Illinois, by C. W. Kent, who, the government asserts, receives $100,000 a year from its manufacture and sales and that he has sold instruments valued at $3,000,000 in the last ten years."

The gadget itself looks like a flashlight handle with a metal roller at one end. Inside the hollow handle are two ordinary flashlight batteries, a mechanical interrupter and faradic coils. Actually, the machine is a small faradic inductor which, when applied to the body, produces a tingling sensation and causes muscular spasm.

The Kansas City *Journal* for Jan. 28, 1941 stated that the manufacturer, C. W. Kent, "describes himself as a graduate of the United States Institute of Phrenology." The report continued: "Kent's pamphlets, designed to promote sales, were colorful in their language. They represented that the device, when applied to ailing human beings, produced 'rhythmic contraction of muscles, aiding the heart in forcing blood along its channels to carry away languishing tissue and to add healthful cells to normal tissues.'"

The various government experts rapidly pointed out the absurdities in the claims of the manufacturer. Finally the manufacturer went on the stand in his own defense. The Kansas City *Journal* of Jan. 30, 1941 reported that Kent "testified in Federal Court today he had devoted twenty years to the invention, and had sold between 240,000 and 250,000 of the 'hearts' to retail dealers.

"The dealers, he said, sell them for $15. . . . Kent said he collaborated with a Dr. L. T. Bates, whom he described as 'a medical doctor much interested in the Abrams machine,' in preparing the pamphlet describing his 'mechanical heart.' . . . In direct examination by his attorney, Frederick Whitten, Kent testified: 'I had a course in high school entitled physics. I took another course about electric motors. The tuition was $4 and the course ran three months, meeting twice a week. I missed a couple of classes.'

"Kent added he was a graduate of the American Institute of Phrenology and said he attended classes of the institute in New York in 1896.

"Angered by a question by Charles F. Lamkin Jr., assistant United States district attorney, Kent snapped 'How was you born? I don't know.' "

On Jan. 30, 1941 Judge Collet decreed that the "Electreats" were misbranded. He allowed ten days for filing of briefs before the decision would be formally filed.

In a "Findings of Fact and Legal Conclusion" in this case, dated at Kansas City the 28th day of February 1941, Judge Collet pointed out that the misbranding is alleged on the basis of the charge that the labeling was misleading. In his findings it is stated that "Many claims are made for the instrument in the printed matter which accompanied the devices in the shipment thereof in interstate commerce. These claims are based, to a great extent, upon the premise that the use of the instrument will produce pulsations of the muscles of the body. The evidence is overwhelming that no such effect is or can be produced by this device. The claims are therefore misleading and cannot be and are not substantiated."

Judge Collet issued a Memorandum dated the same as the Findings, in which, among other things, he stated:

> "An adequate amount of highly respectable and convincing testimony was offered by the Government to demonstrate that even the principle sought to be followed by the makers of the instrument. . . . Among others appearing for the Government was the eminent Physiologist, Dr. Carlson. His testimony and the illustrations he gave supporting his conclusions were in all respects as fully convincing of the accuracy of his judgment as was his test for the determination of which of two fluids was a sugar solution.[1]
>
> "The extent of the accuracy of the actual claims made for the Electreat in the literature accompanying it may be summarized much as one of the witnesses expressed it, when, in describing a diagram of the human anatomy with accompanying descriptive matter which appeared in one of the Exhibits, he stated that there was an element of truth in the diagram, the element of truth being . . . that the head was on the right end in the picture and the 'rump' appeared in the proper position. From a practical standpoint, the benefit to be derived from the use of the instrument was tersely stated by one of the several leading physicians of Kansas City, to be that the use of the instrument would not injure one if there was nothing the matter with him, but that if the person was suffering from any disorder or ailment, its use might and probably would be injurious."

Continuing, the judge stated:

> "Further detailed reference to the fact should be unnecessary to demonstrate the irresistible conclusion arising from the evidence that the claims made for the devices in the literature accompanying them were as falsely misleading as might well be possible by the use of the English language. The conclusion follows that the Act of Congress has been violated and the requested order for the destruction of the devices must be made."

The final sentence of the Opinion is: "Formal findings of fact and conclusions of law are filed herewith. Judgment will be entered in accordance with the view herein expressed."

1. *Time* magazine, Feb. 10, 1941, page 44, l. c. 47: "Another time he had two beakers of liquid before him: one containing urine, the other, sugar solution. He stuck his finger in one of the containers, tasted it and said: 'Ya, dot's sugar.' "

# *Medical Examinations and Licensure*

## COMING EXAMINATIONS

### BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, June 17-19. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

ARKANSAS:* *Medical.* Little Rock, June 5-6. Sec., Dr. D. L. Owens, Harrison. *Eclectic.* Little Rock, June 5-6. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Oral examination* (required when reciprocity application is based on a state certificate or license issued ten or more years before filing application in California), Los Angeles, July 14. *Written.* San Francisco, June 30-July 3. Sec., Dr. Charles B. Pinkham, 1020 N St., Sacramento.

CONNECTICUT:* *Medical. Written.* Hartford, July 8-9. *Endorsement.* Hartford, July 22. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden. *Homeopathic.* Derby, July 15-16. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven.

DELAWARE: July 8-10. Sec., Medical Council of Delaware, Dr. Joseph S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA:* Washington, May 12-13. Sec., Commission on Licensure, Dr. George C. Ruhland, 203 District Bldg., Washington.

FLORIDA:* Jacksonville, June 23-24. Sec., Dr. William M. Rowlett, Box 786, Tampa.

GEORGIA: Atlanta, June. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta.

HAWAII: Honolulu, July 14-17. Sec., Dr. James A. Morgan, 48 Young Bldg., Honolulu.

INDIANA: Indianapolis, June 17-19. Sec., Board of Medical Registration and Examination, Dr. J. W. Bowers, Citizens Trust Bldg., Fort Wayne.

IOWA:* Iowa City, June 3-5. Dir., Division of Licensure and Registration, State Department of Health, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

KANSAS: Kansas City, June 17-18. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. 7th St., Kansas City.

KENTUCKY: Louisville, June 5-7. Sec., State Board of Health, Dr. A. T. McCormack, 620 S. Third St., Louisville.

MAINE: Augusta, July 1-2. Sec., Board of Registration in Medicine, Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: *Medical.* Baltimore, June 17-20. Sec., Dr. John T. O'Mara, 1215 Cathedral St., Baltimore. *Homeopathic.* Baltimore, June 17-18. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: Boston, July 8-11. Sec., Board of Registration in Medicine, Dr. Stephen Rushmore, 413-F State House, Boston.

MICHIGAN:* Ann Arbor and Detroit, June 11-13. Sec., Board of Registration in Medicine, Dr. J. Earl McIntyre, 202-4 Hollister Bldg., Lansing.

MISSISSIPPI: Jackson, June 25-26. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson.

MISSOURI: St. Louis, May 29-31. Sec., State Board of Health, Dr. Harry F. Parker, State Capitol Bldg., Jefferson City.

NEBRASKA:* Omaha, June 12. *All applications must be on file not later than May 29.* Dir., Mrs. Jeanette Crawford, 1009 State Capitol Bldg., Lincoln.

NEW JERSEY: Trenton, June 17-18. Sec., Dr. Earl S. Hallinger, 28 W. State St., Trenton.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 23-26. Chief, Bureau of Professional Examinations, 315 Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 16-20. Sec., Dr. W. D. James, Hamlet.

NORTH DAKOTA: Grand Forks, July 1-4. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Practical.* June 11 and 14. *Written.* June 12-13. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA:* Oklahoma City, June 11-12. Sec., Dr. James D. Osborn Jr., Frederick.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 8-12. Act. Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. Marguerite G. Steiner, 358 Education Bldg., Harrisburg.

RHODE ISLAND:* July 10. Acting Chief, Division of Examiners, Mr. E. Clyde Thomas, 366 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, June 23-25. Sec., Dr. A. Earle Bouzer, 505 Saluda Ave., Columbia.

SOUTH DAKOTA:* Pierre, July 15-16. Dir., Medical Licensure, Dr. J. F. D. Cook, State Board of Health, Pierre.

VERMONT: Burlington, June 17-19. Sec., Dr. F. J. Lawliss, Richford.

VIRGINIA: Richmond, June 17-20. Sec., Dr. J. W. Preston, 30½ Franklin Road, Roanoke.

WEST VIRGINIA: Wheeling, July 7-9. Sec., Public Health Council, Dr. C. F. McClintic, State Capitol, Charleston.

WISCONSIN:* Milwaukee, June 24-27. Sec., Dr. H. W. Shutter, 425 E. Wisconsin Ave., Milwaukee.

WYOMING: Cheyenne, June 2-3. Sec., Dr. M. C. Keith, Capitol Bldg., Cheyenne.

* Basic Science Certificate required.

### BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARKANSAS: Little Rock, May 19. Sec., Mr. Louis E. Gehauer, 701 Main St., Little Rock.

CONNECTICUT: June 14. Address State Board of Healing Arts, 1945 Yale Station, New Haven.

FLORIDA: De Land, June 7. *Applications must be on file not later than May 24.* Sec., Prof. J. F. Conn, John B. Stetson University, De Land.

IOWA: Des Moines, July 8. Dir., Division of Licensure and Registration, State Department of Health, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

OKLAHOMA: Oklahoma City, May 22. Sec. of State, Hon. C. C. Childress, State Capitol, Oklahoma City.

OREGON: Corvallis, July 12. Sec., State Board of Higher Education, Mr. Charles D. Byrne, University of Oregon, Eugene.

RHODE ISLAND: May 21. Acting Chief, Division of Examiners, Mr. E. Clyde Thomas, 366 State Office Bldg., Providence.

SOUTH DAKOTA: June. Sec., Dr. G. M. Evans, Yankton.

WISCONSIN: Milwaukee, June 7. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee.

# Bureau of Legal Medicine and Legislation

## MEDICOLEGAL ABSTRACTS

**Malpractice: Sponge Left in Wound; Applicability of Doctrine of Res Ipsa Loquitur.**—The defendant physicians, in the course of an operation on the plaintiff's hip, left a gauze sponge deeply buried in the operative wound about ½ inch from the femur. The gauze remained there until it was removed by a second operation some months later. During the intervening period the plaintiff's leg became infected and discharged quantities of offensive pus through suppurating channels or sinuses, which originated in the vicinity of the sponge and extended through intervening tissues to the exterior. She suffered excessive pain, physical and mental disorders and possible permanent injury through the stiffening of the knee joint. Subsequently the plaintiff sued the defendants for malpractice. The defendants admitted that a gauze sponge had been left in the plaintiff's body, but they testified that nearly one hundred such sponges had been used during the operation and that they had exercised great care in the usual and customary manner to prevent any of them being left in the wound. They described the system used as "palpating," or feeling for the sponges, and claimed that they had done this thoroughly and with due care. Furthermore, several expert witnesses called by the defendants approved the methods used by the defendants during the operation. From a judgment for the plaintiff the defendants appealed to the Supreme Court of North Carolina.

The defendants contended that the plaintiff had produced no evidence of negligence except that which could be inferred under the doctrine of res ipsa loquitur, if it were applicable, and that such inference had been overcome by the defendants' evidence of due care. But they further contended that the doctrine of res ipsa loquitur was not applicable to malpractice cases. The Supreme Court admitted that a physician is not an insurer of results and that no presumption of negligence can arise merely because a particular course of treatment is unsuccessful. However, said the court, the doctrine of res ipsa loquitur is applicable in malpractice cases as well as in other cases involving negligence, where the only proper inference is that the injuries would not have happened except in the absence of due care. Furthermore, the doctrine of res ipsa loquitur has uniformly been applied to instances in which foreign objects, such as sponges, towels, needles, pieces of glass and the like, have been introduced into a patient's body during a surgical operation and left there. The court held, therefore, that the doctrine of res ipsa loquitur was applicable to the present case. It further held that the inferences which arise when that doctrine applies were not overcome simply by the introduction of evidence by the defendants. Such inferences are more than a mere prima facie case; they constitute evidence to be considered by the jury along with whatever evidence the defendants may also have produced. The court concluded, however, that the plaintiff was entitled to a judgment in her favor even without relying on the doctrine of res ipsa loquitur because the mere fact of leaving the sponge in the plaintiff's body was "so inconsistent with due care as to raise an inference of negligence." The judgment for the plaintiff was accordingly affirmed.—*Mitchell v. Saunders et al., 13 S. E. (2d) 242 (N. C., 1941).*

**War Risk Insurance: Permanency of Total Disability When Indicated Surgical Treatment Is Refused.**—While serving with the Army in France in 1918 the insured was operated on for acute appendicitis. During the operation it was discovered that he was also suffering from a hernia, but nothing was done then to relieve that situation. On his discharge and return home, in 1919, the insured consulted his local physician concerning his condition and was advised, as early as May of that year, that he was suffering from adhesions following the appendectomy and that he should go to a hospital for observation and treatment. He failed to follow this advice, however, until he suffered a violent attack in August 1919. It was then found that his condition was already beyond surgical aid and he died seven days later from acute dilatation of the stomach caused by the adhesions. The plaintiff, administrator of the insured's estate, subsequently sued the United States on a war risk insurance policy and obtained a judgment from which the defendant appealed to the United States circuit court of appeals, fourth circuit.

It was conceded that the insured was suffering from adhesions prior to the lapse of his policy and that these adhesions resulted in total disability. The only question for determination was whether or not the insured's total disability had become permanent at the time his policy lapsed. The government contended that the condition had not become permanent because (1) the evidence showed that proper surgery, which had been recommended to the insured in due time prior to his death, would relieve adhesions and result in a cure in 80 to 90 per cent of cases of this type, if performed before the patient was dying, and (2) because there was nothing in the record to show that the insured would not have been relieved by such an operation. The court held that, when the cause of a condition is known and when it is also recognized that such condition is curable frequently, permanence cannot be said to exist until a reasonable effort to cure has failed. Since the insured had failed to undergo treatment deemed reasonably certain of curing his ills, the court concluded that the plaintiff had failed to prove that the insured was permanently disabled. Judgment for the plaintiff was therefore reversed.—*United States v. Marsh et al., 107 F. (2d) 173 (1939).*

**Optometry Practice Act (Minnesota): Right of Unlicensed Person to Own Eye Testing Devices for Use by Licensed Optometrist.**—The defendants operated a jewelry store in which they sold eyeglasses for the correction of vision. They were not licensed to practice optometry but they employed a duly licensed optometrist who had exclusive charge, supervision and control of the optometric phase of the defendants' business. The optometrist made examinations of eyes, prescribed eyeglasses, had prescriptions filled by an optical firm and fitted the eyeglasses to the customers' eyes. He was paid a weekly salary by the defendants. He made no specific charge for his services, as the price of the eyeglasses included compensation for all professional services rendered. The money collected from the optometric business was turned over to the defendants. The defendants owned all the equipment, apparatus and materials used by the optometrist in conducting the business, including apparatus for testing and measuring the powers of vision of the human eye. The state petitioned for an injunction to enjoin the defendants from engaging in the unlawful practice of optometry, and from an order denying the injunction the state appealed to the Supreme Court of Minnesota.

Both parties relied on the following provision in the Minnesota optometry practice act (Mason's Minn. St. 1938 Supp., sec. 5789), which provides:

> And it shall be unlawful for any person, not licensed as an optometrist hereunder, to sell or dispose of, at retail, any spectacles, eye glasses or lenses for the correction of vision in any established place of business or elsewhere in this state except under the supervision, direction and authority of a duly licensed optometrist holding a certificate under this chapter, who shall be in charge of and in personal attendance at the booth, counter or place where such articles are sold or disposed of.

The defendants contended that their sales of eyeglasses were not illegal because they were made under the supervision, direction and authority of a duly licensed optometrist. In a prior decision, *Williams* v. *Mack*, 202 Minn. 402, 278 N. W. 585, abstr. J. A. M. A. **111**:2332 (Dec. 17) 1938, said the Supreme Court of Minnesota, this court held that the employment of an optometrist under an arrangement identical with that used by the defendants in the present case was lawful. Accordingly, the court held that the defendants were not engaged in the unlawful practice of optometry by employing a licensed optometrist to conduct the optometric phase of their business. The state contended, however, that the defendants' ownership and possession of the eye testing apparatus constituted the unlawful practice of optometry under another provision of the same section of the Minnesota optometry practice act which provides that any person shall be deemed to be practicing optometry who shall "have in his possession testing appliances for the purpose of the measurement of the powers

of vision." The court held that the two provisions quoted, being parts of the same section of the act, must be construed together and, as already pointed out, the defendants had the right to engage in the business of selling eyeglasses as long as such sales were made under the personal charge and direction of a duly licensed optometrist. Permission to engage in the selling of eyeglasses includes also the right to do the things reasonably and properly incident to such dealing. Ownership and possession of eye testing instruments and other appliances by the unlicensed vendor for the sole use of the licensed optometrist rendering the optometric services, in the judgment of the court, is incident to the rendition of such services and to the right to engage in the business of selling eyeglasses. The court pointed out that there was no provision in the law requiring an optometrist employed by another to furnish and provide his own apparatus in carrying on his employer's business. The court concluded, therefore, that the defendants' possession of the eye testing apparatus and equipment under the circumstances disclosed did not constitute the unlawful practice of optometry. Accordingly, the judgment for the defendants was affirmed.—*State v. Goodman et al., 288 N. W. 157 (Minn., 1939).*

**Osteopathy: Osteopath a "Licensed Physician" Under Statute Relating to Coroners.**—The relator, an osteopathic physician and surgeon licensed by the state medical board of Ohio to practice osteopathy and surgery, petitioned the defendant Board of Elections of Darke County, Ohio, to accept and file his declaration of candidacy for nomination to the office of coroner on the Democratic ticket and to cause his name to be printed on the official primary election ballot. On the refusal of the board to take the action requested, the relator applied to the Supreme Court of Ohio for a writ of mandamus to compel such action.

The defendant contended that an osteopathic physician and surgeon is not a "licensed physician" within the purview of section 2856-3 of the General Code of Ohio, which provides:

> No person shall be eligible to the office of coroner in any county except a licensed physician of good standing in his profession or a person who shall have previously served as coroner prior to his election.

The Supreme Court, however, held that the legislature, in passing the section quoted, was interested only in the duties of a coroner and in providing that a layman, unless he had previously been a coroner, should not be eligible for the office. The legislature thus used the term "licensed physician," or a "physician" who is "licensed," merely to distinguish such persons from laymen in general. The use of such phraseology, continued the court, was not for the purpose of distinguishing between the various schools of medicine or the different kinds of licensed physicians. The court concluded that, until such time as the legislature by appropriate legislation indicates more definitely what it intended by the term "licensed physician," a licensed osteopath is a "licensed physician" within the meaning of section 2856-3. The writ of mandamus was therefore allowed.—*State ex rel. Kester v. North et al., Board of Elections, 26 N. E. (2d) 1020 (Ohio, 1940).*

# Society Proceedings

## COMING MEETINGS

American Medical Association, Cleveland, June 2-6. Dr. Olin West, 535 North Dearborn St., Chicago, Secretary.

American Association for the Study of Allergy, Cleveland, June 2-3. Dr. J. Harvey Black, 1405 Medical Arts Bldg., Dallas, Tex., Secretary.

American Association for the Study of Goiter, Boston, May 12-14. Dr. W. Blair Mosser, 133 Biddle St., Kane, Pa., Secretary.

American Association for the Surgery of Trauma, Montreal and Montebello, Canada, May 29-31. Dr. Ralph G. Carothers, 409 Broadway, Cincinnati, Secretary.

American Association for Thoracic Surgery, Toronto, Canada, June 9-11. Dr. Richard H. Meade Jr., 2116 Pine St., Philadelphia, Secretary.

American Association of Genito-Urinary Surgeons, Hot Springs, Va., May 29-31. Dr. Charles C. Higgins, 2020 East 93d St., Cleveland, Secretary.

American Association of Medical Milk Commissions, Cleveland, June 1-2. Dr. Paul B. Cassidy, 2037 Pine St., Philadelphia, Secretary.

American Association on Mental Deficiency, Salt Lake City, June 20-24. Dr. E. Arthur Whitney, Washington Road, Elwyn, Pa., Secretary.

American Broncho-Esophagological Association, Cleveland, June 3. Dr. Paul H. Holinger, 1150 North State St., Chicago, Secretary.

American College of Chest Physicians, Cleveland, May 31-June 2. Dr. Paul H. Holinger, 500 North Dearborn St., Chicago, Secretary.

American Gynecological Society, Colorado Springs, May 26-28. Dr. Richard W. TeLinde, Johns Hopkins Hospital, Baltimore, Secretary.

American Heart Association, Cleveland, May 30-31. Dr. Howard B. Sprague, 50 West 50th Street, New York, Secretary.

American Laryngological Association, Atlantic City, May 28-30. Dr. Charles J. Imperatori, 108 East 38th St., New York, Secretary.

American Laryngological, Rhinological and Otological Society, Los Angeles, June 16-18. Dr. C. Stewart Nash, 277 Alexander St., Rochester, N. Y., Secretary.

American Medical Women's Association, Cleveland, June 1-2. Dr. Etta Gray, 649 South Olive St., Los Angeles, Secretary.

American Neurological Association, Atlantic City, N. J., June 9-11. Dr. Henry A. Riley, 117 East 72d St., New York, Secretary.

American Ophthalmological Society, Hot Springs, Va., May 29-June 1. Dr. Eugene M. Blake, 303 Whitney Ave., New Haven, Conn., Secretary.

American Orthopedic Association, Toronto, Canada, June 9-12. Dr. Charles W. Peabody, 474 Fisher Bldg., Detroit, Secretary.

American Otological Society, Atlantic City, N. J., May 26-28. Dr. Isidore Friesner, 36 East 73d St., New York, Secretary.

American Pediatric Society, Hot Springs, Va., May 22-24. Dr. Hugh McCulloch, 325 North Euclid Ave., St. Louis, Secretary.

American Proctologic Society, Cleveland, June 1-3. Dr. William H. Daniel, 1930 Wilshire Blvd., Los Angeles, Secretary.

American Radium Society, Cleveland, June 2-3. Dr. William E. Costolow, 1407 South Hope St., Los Angeles, Secretary.

American Rheumatism Association, Cleveland, June 2. Dr. A. R. Shands, Dupont Institute, Wilmington, Del., Secretary.

American Society of Clinical Pathologists, Cleveland, May 30-June 1. Dr. A. S. Giordano, 531 North Main St., South Bend, Ind., Secretary.

American Therapeutic Society, Cleveland, May 30-31. Dr. Oscar B. Hunter, 1835 Eye St. N.W., Washington, D. C., Secretary.

American Urological Association, Colorado Springs, Colo., May 19-22. Dr. Clyde L. Deming, 789 Howard Ave., New Haven, Conn., Secretary.

Association for Research in Ophthalmology, Cleveland, June 3. Dr. Conrad Berens, 35 East 70th Street, New York, Secretary.

Connecticut State Medical Society, Bridgeport, May 21-22. Dr. Creighton Barker, 258 Church St., New Haven, Secretary.

Georgia, Medical Association of, Macon, May 13-16. Dr. Edgar D. Shanks, 478 Peachtree St., N.E., Atlanta, Secretary.

Idaho State Medical Association, Sun Valley, June 18-21. Dr. F. B. Jeppesen, 105 North 8th St., Boise, Secretary.

Illinois State Medical Society, Chicago, May 20-23. Dr. Harold M. Camp, 224 South Main St., Monmouth, Secretary.

Iowa State Medical Society, Davenport, May 14-16. Dr. R. L. Parker, 3510 Sixth Ave., Des Moines, Secretary.

Kansas Medical Society, Topeka, May 13-15. Mr. C. G. Munns, 112 West Sixth St., Topeka, Executive Secretary.

Maine Medical Association, York Harbor, June 22-24. Dr. Frederick R. Carter, 22 Arsenal St., Portland, Secretary.

Massachusetts Medical Society, Boston, May 21-22. Dr. Robert N. Nye, 8 Fenway, Boston, Secretary.

Medical Library Association, Ann Arbor, Mich., May 29-31. Miss Anna C. Holt, 25 Shattuck St., Boston, Secretary.

Minnesota State Medical Association, St. Paul, May 26-28. Dr. B. B. Souster, 493 Lowry Medical Arts Bldg., St. Paul, Secretary.

Mississippi State Medical Association, Biloxi, May 13-15. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

Montana, Medical Association of, Great Falls, June 24-26. Dr. Thomas F. Walker, 206 Medical Arts Bldg., Great Falls, Secretary.

National Gastroenterological Association, New York, May 13-16. Dr. G. Randolph Manning, Room 319, 1819 Broadway, New York, Secretary.

New Hampshire Medical Society, Manchester, May 13-14. Dr. Carleton R. Metcalf, 5 South State St., Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, May 20-22. Dr. Alfred Stahl, 55 Lincoln Park, Newark, Secretary.

New York State Association of Public Health Laboratories, Syracuse, May 19. Miss Mary B. Kirkbride, New Scotland Ave., Albany, Secretary.

North Carolina, Medical Society of the State of, Pinehurst, May 19-21. Dr. I. H. Manning, Chapel Hill, Secretary.

North Dakota State Medical Association, Grand Forks, May 19-21. Dr. L. W. Larson, 221 Fifth St., Bismarck, Secretary.

Ohio State Medical Association, Cleveland, June 3. Mr. C. S. Nelson, 79 East State St., Columbus, Executive Secretary.

Oklahoma State Medical Association, Oklahoma City, May 19-22. Dr. L. S. Willour, 210 Plaza Court Bldg., Oklahoma City, Secretary.

Pacific Coast Oto-Ophthalmological Society, Los Angeles, May 26-29. Dr. C. Allen Dickey, 450 Sutter Street, San Francisco, Secretary.

Pacific Northwest Medical Association, Spokane, Wash., June 25-28. Dr. C. W. Countryman, 407 Riverside Ave., Spokane, Wash., Secretary.

Rhode Island Medical Society, Providence, May 28-29. Dr. Guy W. Wells, 124 Waterman St., Providence, Secretary.

Society of Surgeons of New Jersey, Painfield, May 28. Dr. Walter B. Mount, 21 Plymouth St., Montclair, Secretary.

South Dakota State Medical Association, Mitchell, May 18-20. Dr. Clarence E. Sherwood, 107½ Egan Ave., Madison, Secretary.

Texas, State Medical Association of, Fort Worth, May 12-15. Dr. Holman Taylor, 1404 West El Paso St., Fort Worth, Secretary.

Utah State Medical Association, Salt Lake City, June 12-14. Dr. D. G. Edmunds, 610 McIntyre Bldg., Salt Lake City, Secretary.

West Virginia State Medical Association, Charleston, May 12-14. Mr. Joe W. Savage, Public Library Bldg., Charleston, Executive Secretary.

# Current Medical Literature

## AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1931 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

### American Heart Journal, St. Louis

**21**:1-132 (Jan.) 1941

*Changes in Heart Volume in Addison's Disease and Their Significance. T. H. McGavack, New York.—p. 1.
Use of Cathode Ray for Recording Heart Sounds and Vibrations: II. Studies on Muscular Element of First Heart Sound. J. R. Smith, A. S. Gilson and W. B. Kountz, St. Louis.—p. 17.
Effect of Intravenous Injection of Papaverine Hydrochloride on Mortality Resulting from Sudden Occlusion of Coronary Arteries in Dogs. C. G. McEachern, F. H. Smith and G. W. Manning, Toronto.—p. 25.
Tetralogy of Eisenmenger. O. Saphir and M. Lev, Chicago.—p. 31.
Studies of Criteria for Classification of Arterial Hypertension: Parts I to VII. J. Q. Griffith Jr., E. Roberts and H. O. Corbit, R. B. Rutherford, M. A. Lindauer, W. E. Fry, Philadelphia.—p. 47.
*Treatment of Congestive Heart Failure with Orally Administered Mercurial Diuretic. R. C. Batterman, A. C. DeGraff and O. A. Rose, New York.—p. 98.
Electrocardiographic Observations on Athletes Before and After a Season of Physical Training. W. W. Tuttle and H. M. Korns, Iowa City. —p. 104.

**Changes in Heart Volume in Addison's Disease.**—McGavack studied the relationship between cardiac mensuration and the stage of Addison's disease in 6 cases. He observed an average reduction of 31.9 per cent in heart volume in five instances of crisis and of 16.1 per cent in 3 patients with cortical insufficiency who were not having crises. Prior to the development of Addison's disease, 1 patient had a cardiac volume within normal limits. Two others, 1 first observed during a crisis and 1 with a crisis impending, regained a normal heart volume after adequate therapy. Serial estimations of the blood volume of 2 patients were performed, and significant lowering was seen only during crises. Patients with cortical insufficiency who were not having crises had valves within the normal range. The conclusion is that the reduction in cardiac volume in Addison's disease is a direct effect of the deficiency of adrenocortical hormone. When a crisis supervenes the diminished blood volume plays an accessory role in still further decreasing the size of the heart.

**Oral Mercurial Diuretic for Congestive Heart Failure.**—Batterman and his co-workers evaluated the diuretic effect of salyrgan-theophylline given orally in tablet form to patients with congestive heart failure. Nine patients were given five tablets of the drug (each tablet is equivalent to 30 mg. of mercury) whenever a diuretic was necessary, usually at intervals of from three to five days. All but 1 patient obtained a satisfactory effect, but even he on further treatment had a good response. The tablets were administered four times to 2 patients and five times to 1 without evidence of toxicity. The effectiveness of the oral preparation was compared with that of other diuretics. Of the fifty-six trials with the salyrgan-theophylline tablets on 29 patients a satisfactory diuresis was produced forty times, or 71.5 per cent. Parenteral preparations were more consistently effective, producing diuresis in from 90 to 95 per cent of the cases. Suppositories were effective in from 50 to 63 per cent of the trials. Oral administration causes a loss of from 3 to 5 pounds (1.3 to 2.3 Kg.) in body weight; occasionally the loss exceeds 8 pounds (3.6 Kg.). Parenteral preparations produce a greater diuresis, and weight losses of more than 8 pounds are common. Although the onset and peak of diuresis after oral administration occurred slightly later than after parenteral injection, usually the diuresis was complete within twenty-four hours. In 35 per cent of the trials a significant weight loss occurred within the second twenty-four hours. In eight of the sixteen instances in which the oral preparation failed to elicit a satisfactory response it was successful at other times. As with parenteral preparations, previous administration of ammonium chloride and digitalis increased the effectiveness of the oral preparation. Failure in some cases appeared to be related to the advanced state of heart disease and lack of digitalis or of ammonium chloride; in others there was no apparent reason. Three patients experienced gastrointestinal symptoms after taking the oral preparation. Dividing the dose or giving a smaller one might result in diuresis without these untoward effects (diarrhea and epigastric discomfort). Only extended studies on ambulatory patients or patients with chronic congestive heart failure will show whether repeated use is safe.

### American Journal of Clinical Pathology, Baltimore

**11**:1-82 (Jan.) 1941

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**Edema in Preeclampsia and Eclampsia.**—Dieckmann studied the physiology of normal pregnant and toxemic women. In more than 2,700 patients with toxemia he made various examinations. He believes that his data and those in the literature indicate that the increased capillary permeability and a delayed or impaired water and sodium chloride elimination incidental to normal pregnancy are greatly augmented in certain patients, because either of internal or of external factors, resulting in an abnormal gain in weight and eventually in edema. From his studies he concludes that the following physiologic changes occur in normal pregnancy: 1. The venous pressure in the legs is increased and causes an increased loss of fluid from the blood into the tissues of the legs. 2. There is an increased capillary permeability. 3. The elimination of water and solids by the kidney is delayed or impaired. 4. The average serum protein concentration is 6.5 Gm. per hundred cubic centimeters. 5. The average colloid osmotic pressure of the serum protein is 28.7 cm. of water. If these changes are of greater magnitude than normal or if they are exaggerated by internal or external factors, preeclampsia and eclampsia may

occur. Thus the following is observed in these diseases: 1. Greater alterations than normal are present in the venous and capillary pressures and capillary permeability. 2. The average serum protein concentration in edematous patients with preeclampsia is 6.22, with eclampsia it is 6.7, and with vascular-renal disease and normal renal function it is 6.67 Gm. per hundred cubic centimeters. 3. The average colloid osmotic pressure of edematous preeclamptic patients is 24.9 and of toxemic patients without edema it is 26.5 cm. of water. 4. The retention of sodium, chlorine and water is greatly increased in some pregnant patients, resulting in an abnormal gain in weight and finally in edema. 5. Changes in the concentration of the female hormones are apparently associated with edema, but whether this is the cause or the result is not known. 6. The prevention and treatment of the edema depend on the dietary limitation of sodium chloride and water, the principal components of edema fluid. Sodium chloride restriction presents fewer difficulties and causes less discomfort than the restriction of water.

**Are Estrogens Carcinogenic in Women?**—In an effort to determine whether estrogen therapy induces endometrial or vaginal epithelial proliferation which may lead to the formation of neoplasms, Geist and Salmon made biopsies of the vaginal and endometrial mucosas of 206 women during various stages of treatment with estrogens. Treatment lasted for from six months to five and one half years. The first effect of estrogen, seen as early as four days after 100,000 international units of estrogen intramuscularly, on the atrophic vaginal mucosa is a rapid proliferation of the basilar epithelial cells. This proceeds at a rapid pace and leads to an increase in the number of epithelial layers and results in desquamation of some superficial epithelial cells. The proliferative activity is not uniform. Areas of hypoplasia are found adjacent to areas of active proliferation. If estrogen therapy is continued there is a progressive increase in the epithelial layers, accompanied by desquamation. There is a wide individual variation in the response to the same amount of the hormone. This variation is probably due to the degree and duration of estrogen deficiency prior to estrogen therapy and the rate of its absorption and excretion. Once morphologic restitution has been attained, further increase in dosage does not increase the proliferative response. The response of the atrophic endometrium to estrogen therapy is slower than that of the vaginal mucosa. Not infrequently from 400,000 to 600,000 international units of estrogen, which produces striking epithelial growth in the vaginal mucosa, will cause only slight proliferation in scattered areas of the endometrium. As the dosage approaches 1,000,000 international units the endometrium shows a more definite and uniform response, which resembles the proliferative pattern of the normal postmenstrual phase of the cycle. Uterine bleeding usually occurs after the patient has received from 1,000,000 to 1,500,000 international units during a period of from four to six weeks. Examination of the uterine blood revealed desquamated fragments of endometrium containing glands and stromal cells. Biopsies during this time exhibited various proliferative changes associated with distended (cystic) glands. Biopsies after bleeding ceased usually revealed a quiescent and, in many cases, an atrophic endometrium. Continued administration of estrogens after bleeding ceased resulted in a repetition of the proliferative process. In some cases this cyclic bleeding occurred at intervals of from four to ten weeks for from six to thirty-eight months. In these cases the endometrium at the end of these long periods does not show any greater proliferative activity than after the initial estrogen therapy. Essentially the same response followed therapy with estradiol dipropionate administered intramuscularly, orally, by cutaneous inunctions and by vaginal suppositories. In human beings it is impossible to administer the huge doses of estrogens that would justify comparison with the experimental production of carcinoma in rodents. However, within the limits of the dosage used in this investigation (up to 53,400,000 international units) there is no justification for the fear that genital carcinoma may result from the therapeutic use of estrogens.

**Rheumatic Heart Disease in Pregnancy.**—Gorenberg and McGleary reviewed the 345 cases of rheumatic heart disease admitted to the Margaret Hague Maternity Hospital from 1933 to 1939. There were 77 cardiac failures among the group. The authors believe that unless adequate bed rest is enforced the patients with heart disease who will fail are those whose measure of functional capacity is in the relatively severe grades of heart disease, those who are more than 30 years of age and those who give a history of previous decompensation. These patients should be willing, if they wish to assume the burden of pregnancy, to submit to frequent antepartum observations from the beginning of pregnancy and must be willing and able to spend the greater part of the pregnancy at absolute bed rest if necessary. The incidence of cardiac failure in pregnancy can be reduced if early and absolute bed rest is adhered to. There were 2 failures among the authors' last 103 cases; 1 of these was possibly preventable. Of the 77 cardiac failures 80 per cent occurred before the last month of gestation. Acute failure during labor is rare. A lightening of the steadily increasing circulatory burden that pregnancy exerts occurs from four to six weeks before delivery with a consequent clinical improvement. Therefore the authors feel that resort to late pregnancy terminations are not wise and they follow the general rule of allowing gestation to go to term. Each pregnancy is an individual problem in the management of labor. Twenty-nine, or 8.4 per cent, of the patients were delivered by the abdominal route and 91.5 per cent vaginally. The incidence of morbidity and the mortality are significantly higher following cesarean section and, as cardiac decompensation is rare during labor, the authors feel that the "burden of proof" in these cases lies with cesarean section. Therefore the patients who go into labor well compensated may in general be handled as though not suffering from heart disease.

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## American Journal of Tropical Medicine, Baltimore

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*Reaction of Serums from Patients with Yaws in Quantitative Complement Fixation Tests for Syphilis and Tuberculosis. Elizabeth Maltaner, Albany, N. Y.—p. 145.
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**Reaction of Serums from Patients with Yaws.**—Maltaner examined 44 specimens of serum from patients with yaws by the quantitative tests for syphilis and tuberculosis. Forty-one of the serums reacted to the complement fixation test for syphilis. Thirty-five had titers greater than 10 and 24 were 100 or higher; 12 ranged from 100 to 200 and 12 from 200 to 400. Thus the degree of reaction was generally severe. The absence of a reaction in the other 3 cases was not explainable on the basis of the clinical data that were furnished. The same linear relations between the reagents were observed in the reactions of the serums from patients with yaws and the cholesterolized tissue extract antigen as characterize those of syphilitic serum. Precipitation tests for syphilis were made with 3 highly reacting serums with titers of 251, 347 and 384. Only partial reactions were obtained with 2 each in the Kahn and Kline tests of the undiluted serum. When the serum was diluted, well defined precipitation occurred. No specimens from patients with yaws reacted strongly in the complement fixation test for tuberculosis. All but two had titers in the range below 3, and the 2 were 3.5 and 3.8. Twenty-seven of the patients were said to show no evidence of tuberculosis; for the others no information regarding tuberculosis was given. The previously reported severe reactions of the leprosy serums with tubercle antigen, like those of the yaws serums in the test for syphilis, are undoubtedly associated with common antigenic constituents in the acid-fast incitants of leprosy and tuberculosis and in the spirochetes of yaws and syphilis. This is further borne out by the characteristic linear relationships obtained in all these reactions. It would be interesting to have for comparison with observations in leprosy and yaws some results with serums from patients with malaria in which the significance of reactions obtained in serologic tests for syphilis so often comes into question.

## Annals of Internal Medicine, Lancaster, Pa.

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*Premonitory Symptoms of Acute Coronary Occlusion: Study of 260 Cases. A. M. Master, S. Dack and H. L. Jaffe, New York.—p. 1155.
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*Treatment of Pneumococcic Pneumonias with Sulfapyridine, Sulfathiazole and Serum: Analysis of Results of Specific Therapy at the Boston City Hospital from July 1939 Through June 1940. M. Finland, F. C. Lowell and E. Strauss, Boston.—p. 1184.
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Cardiac Adaptations in Acute Progressive Anoxia. C. J. Wiggers, Cleveland.—p. 1237.
Hysteria—Some Common Misconceptions. D. Lester, Durham, N. C.—p. 1248.

**Sulfamethylthiazole and Sulfathiazole for Septicemia.**—During the last year Hamburger and Ruegsegger treated 12 patients with staphylococcic septicemia by means of thiazole derivatives of sulfanilamide; 8 recovered. The fatalities occurred among patients with acute staphylococcic endocarditis. The distribution of the foci among the 12 patients was as follows: osteomyelitis 3 (1 of whom had meningitis in addition), carbuncle 2, gluteal abscess 1, pyarthrosis 1, fracture 1 and endocarditis 4. If the deaths associated with acute bacterial endocarditis, a condition which still resists the best efforts of the therapist, are disregarded, there were 8 consecutive cases in which the blood stream was cleared of staphylococci. These patients might have survived had they received only supportive treatment; nevertheless their recovery indicates that the thiazole compounds should be given further trial. Study of the cases adduces no evidence of any effect on the local lesions. There were 2 instances of peripheral neuritis among patients treated with sulfamethylthiazole but none among those treated with sulfathiazole. The complication occurred at the beginning of the authors' experience with the drugs, when they were using larger doses than were later found necessary. Smaller doses may have prevented the neuritis. The "minor toxicities"—nausea, vomiting, rashes—appeared to be less frequent among patients receiving sulfa-

methylthiazole. Between 1933 and 1939, 27 cases of staphylococcic septicemia were recorded at the Cincinnati General Hospital, with only 4 recoveries.

**Premonitory Symptoms of Acute Coronary Occlusion.**—Master and his associates prepared a special questionnaire to elicit the history of premonitory pain or discomfort in the chest prior to (as long as four weeks before) the attack of acute coronary occlusion of 260 patients. The physical and emotional activities associated with premonitory symptoms were also inquired into. Such symptoms were present among 44.2 per cent of the 260 patients. Of the majority they consisted of substernal or precordial pain or discomfort. Other prodromes were fatigue, weakness, gastric distress, dyspnea, palpitation, nervousness and dizziness. The sudden typical anginal syndrome or its sudden acceleration frequently preceded the attack of occlusion. The premonitory symptoms usually appeared within twenty-four hours of the acute attack, but sometimes two or three weeks before. Their duration varied from a few minutes to several hours. Although the premonitory pain was usually intermittent or continuous, frequently a period free from pain intervened before the occlusion. The premonitory symptoms occurred during rest 28.5, during mild or moderate activity or walking 68.5 and during strenuous effort 2.9 per cent of the time. The symptoms were not associated with clinical evidence of myocardial infarction. Fever, leukocytosis, tachycardia, drop in blood pressure and characteristic electrocardiographic changes were absent. The anatomic basis for the premonitory symptoms is assumed to be a gradual occlusion of the lumen of the coronary artery by progressive or recurrent intramural hemorrhage or by primary thrombosis on a plaque, which may take hours or days for completion. Early recognition of the premonitory symptoms should reduce the incidence of heart failure and decrease the mortality therefrom as immediate bed rest, which probably will not prevent the impending occlusion, will be possible.

**Sulfapyridine, Sulfathiazole and Serum for Pneumonia.**—Finland and his colleagues state that, of the 911 cases of pneumonia admitted to the Boston City Hospital from July 1939 through June 1940, 691 were treated with sulfapyridine or sulfathiazole alone or with serum. Among these 691 specifically treated patients there were 113 deaths, a mortality of 16.4 per cent. The previous year 54 per cent of all patients with pneumococcic pneumonia received sulfapyridine or serum or both and the mortality was 17.5 per cent. The mortality among the patients who received no specific therapy (except sulfanilamide in a few instances) was 49.5 per cent. In more than three fourths of these fatal cases the etiologic diagnosis and usually the anatomic diagnosis was first made at necropsy. Most of these patients were being treated primarily for other serious and highly fatal illnesses. The gross mortality among 518 patients treated with sulfapyridine alone or with serum was 17.4 per cent, as compared to 12.4 per cent among the 169 who received sulfathiazole with or without serum. These two groups of cases were comparable with respect to all factors but age. More than half of the deaths among the sulfapyridine treated patients occurred in those who were more than 60 years of age, whereas only a third of those treated with sulfathiazole were of this age. As patients more than 60 years of age were relatively twice as frequent among the former and the mortality of the two groups was essentially the same, this factor alone may account for most, if not all, of the difference in mortality between the sulfapyridine and the sulfathiazole treated patients. The fact that the mortality in the sulfapyridine treated patients was higher after February 1 than before that time, when all the patients were treated with that drug, also is supportive. Many specifically treated patients had other serious illnesses, and the mortality among patients with such "secondary" pneumonias was particularly high. The only death among 14 cases complicating pregnancy occurred in a case in which pneumonia complicated a septic abortion. The mortality among patients with acute alcohol intoxication or who had delirium tremens in the course of their pneumonia was also comparatively low.

## Archives of Dermatology and Syphilology, Chicago

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*Exsanguination: Classification and Analysis of Thirty-Three Cases. W. H. Missildine, Eagle Grove.—p. 59.
Subacute Bacterial Endocarditis. M. T. Morton, Estherville.—p. 65.

**Exsanguination.**—Missildine discusses 33 cases of exsanguination from the point of view of recent advances in this field. The material was collected from about a thousand postmortem examinations. Ten of the cases were due to trauma (usually automobile accidents), 4 to a malignant condition, 3 were postoperative, 3 were due to nonsyphilitic rupture of blood vessels, 2 each to postoperative jaundice, obstetric shock, blood dyscrasias, gastric ulcer and syphilitic aortitis and 2 each to suicide, tuberculosis and ruptured esophageal varix. Each type of case is considered separately. No matter how well hemorrhage is controlled, if the fluids given the patient leak out into the tissues instead of remaining in the circulation the

patient remains in shock. Even if the circulating volume is restored by fluids which remain in the circulation, they will not be life saving if the source of the bleeding is not controlled. Seven patients of the entire group who were most intensively treated lived an average of fourteen hours after hemorrhage began, and an average of 1,250 cc. of blood was lost. They received an average of 2,100 cc. of crystalloid fluid (5 per cent dextrose in physiologic solution of sodium chloride) and an average of only 200 cc. of blood. It is stated that adequate treatment has not been carried out until at least 80 per cent of the lost blood is replaced by whole blood or blood serum. Crystalloid solutions are no substitute. When untyped pooled human serum is proved innocuous, every hospital should always have it on hand for emergency use; then cases of hemorrhage can be treated promptly and much more effectively than they have been in the past.

## Journal of Allergy, St. Louis

**12**:117-220 (Jan.) 1941

Antigenic Fractions in Ragweed Pollen: I. Water-Soluble Fractions. A. Stull, W. B. Sherman and S. F. Hampton, New York.—p. 117.
Acquired Specific Hypersensitivity to Simple Chemicals: VI. Further Studies on Purification of Dyes in Relation to Allergic Reactions. M. B. Sulzberger and R. Hecht, New York.—p. 129.
Results of Skin Tests Following Immunization Against Encephalomyelitis (Eastern and Western Types) with Bivalent Vaccines of Chick Embryo Origin. H. Gold and B. Hampil, Glenolden, Pa.—p. 138.
Sensitivity to Casein in Infantile Eczema Confirmed by Biologic Titration of Testing Extract. L. W. Hill and H. N. Pratt, Boston.—p. 143.
Allergy to Pancreatic Tissue Extract: Report of Two Cases. L. H. Criep, Pittsburgh.—p. 154.
Skin Reactions: X. Preseasonal Treatment of Hay Fever by Electrophoresis of Ragweed Pollen Extracts into Skin: Preliminary Report. H. A. Abramson, New York.—p. 169.
Studies with Antigens: III. Preparation of Purified House Dust Extract. C. H. Boatner, B. G. Efron and R. I. Dorfman, New Orleans.—p. 176.
First Report on Hay Fever in Palestine. M. J. Gutmann, Jerusalem, Palestine.—p. 182.
Tetanus in Serum-Sensitive Patient Successfully Treated with New Despeciated Antiserum. M. Schaeffer and G. B. Myers, Detroit.—p. 188.

## Journal of Bone and Joint Surgery, Boston

**23**:1-224 (Jan.) 1941. **Partial Index**

*Calcification and Ossification: I. Calcification in Callus in Healing Fractures in Normal Rats. M. R. Urist, Baltimore, F. C. McLean, Chicago.—p. 1.
Microscopic Changes After Internal Fixation of Transcervical Fracture of Femur. J. Kulowski, St. Joseph, Mo., and J. V. Luck, Los Angeles.—p. 17.
Pseudoplatybasia: Rupture of Transverse Ligament of Axis with Displacement of Odontoid Process and Compression of Cervical Cord. L. J. Wade, New York.—p. 37.
*Conservative Compensation-Derotation Treatment of Scoliosis. A. Steindler, Iowa City; in collaboration with C. W. Ruhlin.—p. 67.
Treatment of Gas Gangrene Experimentally Produced. G. A. Caldwell, New Orleans.—p. 81.
Surgical Approach to Proximal End of Radius and Its Use in Fractures of Head and Neck of Radius. E. B. Kaplan, New York.—p. 86.
Spinal Extradural Cyst Associated with Kyphosis Dorsalis Juvenilis. L. J. Adelstein, Los Angeles.—p. 93.
Some Orthopedic Relationships of Neurofibromatosis. B. H. Moore, Chicago.—p. 109.
Ununited Fracture of Neck of Femur Treated by High Oblique Osteotomy R. S. Reich, Cleveland.—p. 141.
Autosynostosis as Simple Method of Shortening Bone. S. Kofmann, Odessa, Soviet Union.—p. 159.
Radiation Treatment of Ganglions of Wrist and Hand. F. M. Lyle, Chicago.—p. 162.

**Calcification in Callus in Healing Fractures.**—Urist and McLean studied microscopically the healing processes of the fractures of fifteen litters of normal rats. The right tibias were fractured at 7 weeks of age and allowed to heal for varying periods of time. The first reaction to the injury is a sterile inflammation as a consequence of the trauma and hemorrhage. At from four to eight hours after the bone is broken the defect is filled and surrounded by extravasated blood, hemorrhagic débris and inflammatory exudate, including leukocytes. At twenty-four hours there is reparative new formation of connective tissue (fibrocartilaginous callus), which continues to proliferate and to form dense fibrous connective tissue. A part of this differentiates to form hyaline cartilage and fibrocartilage. As these changes take place, new bone begins to form under the periosteum and endosteum at some distance from the fracture line. This new bone invades and replaces the fibrocartilaginous callus and leads to bony union at about the twenty-fourth day. The reparative process as a whole is an example of organization of diverse means to a common end—healing of the fracture by bony union. The progress of calcification has been observed by impregnation of undecalcified sections with silver nitrate. Bone matrix is formed subperiosteally and subendosteally, first at some distance from the fracture line, at about the second or third day following a fracture. It is calcified as it is laid down under optimal conditions with no appreciable interval between its formation and the deposition of bone salt within it. The new matrix is calcifiable as soon as it is recognizable as osseous tissue. A lag in calcification of newly formed osseous tissue may occur, because of failure in the supply or transport of bone minerals rather than to lack of calcifiability in the bone matrix. The matrix of hyaline cartilage becomes calcifiable when the adjacent cartilage cells become vesicular or hypertrophic. The calcification is further conditioned by its relationship to the bone tissue invading the fibrocartilaginous callus. Only matrix in contact with the invading bone calcifies. Only tissues recognizable as bone matrix or cartilage matrix calcify in the callus.

**Compensation-Derotation Treatment of Scoliosis.**—Steindler and Ruhlin present the results of 100 cases of scoliosis treated by the compensation-derotation method five or more years ago. The method consists of equilibration of the pelvis, elimination of weight stress, mobilization of the spine and development of muscle tone. The authors' criteria for muscle sufficiency are equal standing and recumbent lengths of the thorax, diminished distensibility of the spine, active permanent maintenance of posture without effort and restoration of a normal sense of thoracic equilibrium. The compensation-derotation treatment is adequate when the following conditions are present: (1) complete lumbar compensation of a thoracic primary curve with horizontal pelvis and horizontal fifth lumbar vertebra, (2) complete lumbar compensation of the thoracic primary curve with horizontal pelvis but oblique fifth lumbar, (3) a short and moderate thoracic curve with a straight upper and straight lumbar spine and (4) a primary lumbar curve, with a horizontal pelvis and a horizontal fifth lumbar. The method is not indicated in (1) all paralytic cases, (2) severe cases with rigid lumbar spines of all ages and types, (3) all scolioses with oblique pelvis except those of patients close to the completion of growth, (4) all high thoracic or cervicothoracic curves and (5) congenital scoliosis with oblique pelvis and oblique fifth lumbar vertebra. Of the authors' 100 patients 80 were treated conservatively and 20 were operated on. At examination 64 had mobile and 36 rigid spines. At the time spontaneous compensation had occurred in 30; 24 were habitual, 3 congenital, 2 rachitic and 1 paralytic. Complete compensation was obtained by treatment in 50, incomplete or no compensation in 20. Nine of the failures were cases of paralysis indicating an error in selection. Of the 20 cases which could not be adequately compensated, only 1 held; the others failed. All cases of spontaneous compensation held in the presence of good musculature. No attempt was made to correct the primary curve except in 5 cases in which compensation was finally lost and failed because of inadequate musculature; the rest were kept under careful observation, proper support and development of the musculature and remained compensated. Paralytic and severe structural nonparalytic scolioses (not considered in this discussion) did not respond to conservative treatment; the spines had to be fused. Of 21 patients treated conservatively by the combined derotation-compensation method with a follow-up of two years or more, 4 were compensated on admission and were treated by support and muscle development and they maintained the correction. For the 17 not compensated on admission and treated by manipulative correction, derotation, muscle development and support an average of eight months was required for complete compensation. Of these 17, only 1 patient with a congenital scoliosis and a hemisacralization of the fifth lumbar vertebra failed to respond. Therefore the correction held in 20, or 95 per cent, of 21 patients. The improvement over the previous series is due to the better selection of cases. Attempts to correct the thoracic deformity by rotation to the concave side are preposterous. Derotation is directed toward the lumbar and cervico-

thoracic section of the spine. Compensation-derotation and adequate muscle development promise success in the majority of all nonparalytic cases. Adequate compensation-derotation and fusion in the presence of inadequate musculature promises success in all paralytic and many congenital cases.

## Journal of Experimental Medicine, New York

**73**:161-308 (Feb.) 1941

Cirrhosis of Liver Caused by Excess Dietary Cystine. D. P. Earle Jr. and J. Victor, New York.—p. 161.
Occurrence During Acute Infections of Protein Not Normally Present in Blood: I. Distribution of Reactive Protein in Patients' Serums and Effect of Calcium on Flocculation Reaction with C Polysaccharide of Pneumococcus. T. J. Abernethy and O. T. Avery, New York.—p. 173.
Id.: II. Isolation and Properties of Reactive Protein. C. M. MacLeod and O. T. Avery, New York.—p. 183.
Id.: III. Immunologic Properties of C-Reactive Protein and Its Differentiation from Normal Blood Proteins. C. M. MacLeod and O. T. Avery, New York.—p. 191.
Studies on Mechanism of Recovery in Pneumococcic Pneumonia: I. Action of Type Specific Antibody on Pulmonary Lesion of Experimental Pneumonia. W. B. Wood Jr., Boston.—p. 201.
Studies on Photo-Oxidation of Antigen and Antibodies. H. Smetana, New York, and D. Shemin, Uppsala, Sweden.—p. 223.
Roentgen Radiation of Papilloma Virus (Shope): I. Effect of X-Rays on Papillomas of Domestic Rabbits. J. T. Syverton, R. A. Harvey, G. P. Berry and S. L. Warren, Rochester, N. Y.—p. 243.
Action of Synthetic Detergents on Metabolism of Bacteria. Zelma Baker, R. W. Harrison and B. F. Miller, Chicago.—p. 249.
Uterine Adenomas in Rabbit: III. Susceptibility as Function of Constitutional Factor. H. S. N. Greene, Princeton, N. J.—p. 273.
Quantitative Experiments with Antibodies to Specific Precipitates: H. P. Treffers and M. Heidelberger, New York.—p. 293.
Origin of Platelets: Their Behavior in Heart-Lung Preparation. E. Fidlar and E. T. Waters, Toronto, Canada.—p. 299.

## Journal of Lab. and Clinical Medicine, St. Louis

**26**:597-756 (Jan.) 1941

Phytotoxic Reactions of Some Blood Serums, with Biometric Analyses. D. I. Macht and M. B. Macht, Baltimore.—p. 597.
*Sulfapyridine in Experimental Brucellosis. E. S. King and Margaret Lucas, Wake Forest, N. C.—p. 616.
Changes in Sedimentation Rate and Nonfilament-Filament Ratio Following Clinical Improvement in Patients with Low Grade Chronic Illness: Statistical Analysis of 323 Cases. M. H. Stiles, Philadelphia.—p. 621.
Bronchiectasis Associated with Monilia Simulating Pulmonary Tuberculosis: Clinical-Pathologic Study. E. R. Wiese, White Haven, Pa., and E. W. Bixby, Wilkes-Barre, Pa.—p. 624.
Primary Malignant Tumors of Spleen: Report of Case of Lymphosarcoma. C. W. Bonney, Philadelphia.—p. 630.
Comparison of Hinton, Kahn, Kline and Mazzini Tests for Syphilis. E. L. Breazeale, *R. A. Greene and H. B. Harding, Tucson, Ariz.—p. 637.
Bacteriologic Diagnosis in Gonorrhea of Male. A. Gronau, St. Louis.—p. 643.
Experimental Thrombocytopenic Purpura in Guinea Pig. M. E. Leonard and E. H. Falconer, San Francisco.—p. 648.
Depressor Effect of Potassium Sulfocyanate Before and After Bilateral Splanchnicotomy in Normal and Hypertensive Dogs. L. Davis and M. H. Barker, Chicago.—p. 658.
Acid-Base Balance and Water Concentration of Blood During Toxemias of Late Pregnancy. F. W. Oberst, Lexington, Ky., and E. D. Plass, Iowa City.—p. 664.
Effect of Diet on Arterial and Venous Glucose Tolerance Curves in Rheumatoid Arthritis. K. R. Andrews and R. O. Muether, St. Louis.—p. 675.
Variations in Composition of Gastric Juice: Influence of Protein on Acidity and Pepsin. M. J. Matzner, C. Windwer, O. Gawron and A. E. Sobel, Brooklyn.—p. 682.
Critical Survey of Phenolphthalein Test for Gastrointestinal Lesions. N. E. Reich, Brooklyn.—p. 687.

**Sulfapyridine in Experimental Brucellosis.**—King and Lucas infected three groups of normal healthy guinea pigs with Brucella suis, Brucella melitensis and Brucella abortus organisms. The dose of organisms used was one half of a beef liver infusion agar slant culture. Each group of injected animals was divided into four subgroups and the subgroups were treated as follows: One was given 100 mg. of sulfapyridine daily by mouth one and one half hours after the injection of the organisms, one 200 mg. six days after injection, one 100 mg. subcutaneously six days after injection, and the last group served as a control. All treatment ended twenty-one days after injection when a necropsy was performed on all the animals except half of each subgroup receiving 200 mg. These were held for twenty-one days longer to determine whether a flare-up occurred when the drug was discontinued. During treatment all animals looked fairly normal except a few that appeared sick, some of which died. The greatest mortality rate occurred in the Brucella suis group. At necropsy the abdominal organs were observed for obvious pathologic change. In some animals gross evidence of disease was obvious, as small abscess-like lesions were seen on the surface of the liver. In some animals tough, exudative adhesions were present between the intestine and liver, liver and abdominal wall and intestine. The size of the liver and spleen generally did not exceed the normal. The results of the experiments showed only a slight preventive or curative effect. However, in the group of animals receiving 200 mg. of the drug no animals showed pathologic evidence or a positive culture except in the group that was held over for quiescent infection determination, in which the infection was being held under control by the drug and flared up after it was discontinued. The best results with the drug were obtained in Brucella suis infections and poorest results in Brucella abortus. Among the animals held over for twenty-one days without treatment, heavy infections in both Brucella suis and Brucella abortus animals were found and negative pathologic and cultural evidence in Brucella melitensis animals. In vitro tests showed that 1:1,000 and 1:10,000 concentrations of the drug against Brucella suis resulted in complete destruction of the organism. Against Brucella melitensis the 1:1,000 concentration showed complete bactericidal power, the 1:10,000 nearly complete killing power. Brucella abortus was far more resistant; only the 1:1,000 concentration showed a definite bactericidal effect.

## Journal of Urology, Baltimore

**45**:1-146 (Jan.) 1941

Some Problems in Management of Urinary Calculi. J. D. Barney and G. E. Jones, Boston.—p. 1.
Significance of Aneurysm of Abdominal Aorta Masquerading as Primary Urologic Disease: Case Reports. C. A. W. Uhle, Philadelphia.—p. 13.
Aneurysm of Renal Artery. H. H. Howard, H. I. Suby and J. Harberson, Boston.—p. 41.
Caliceal Diverticulum. G. C. Prather, Boston.—p. 55.
*Significance of Hypertension in Prostatics with Chronic Urinary Retention. E. W. Campbell, Philadelphia.—p. 70.
Method of Estimating Size of Prostate Gland. E. L. Peirson and S. A. Wilson, Salem, Mass.—p. 82.
Diagnostic Pitfalls in Carcinoma of Prostate. C. J. E. Kickham, Boston.—p. 92.
Angioma of Corpus Cavernosum Penis. S. M. Rabson, New York.—p. 111.
Effect of Testosterone Propionate on Seminal Fluid in Man. N. J. Heckel and C. R. Steinmetz, Chicago.—p. 118.
Anesthetic Results in Urogenital Surgery: Report of 2,059 Operations. R. Engel, E. Cushnie, H. Livingstone and I. Shank, Chicago.—p. 124.
*Use of Sulfathiazole as Urinary Antiseptic. H. F. Helmholz, with technical assistance of Nora Larson, Rochester, Minn.—p. 135.

**Hypertension, Prostatism and Chronic Urinary Retention.**—Campbell determined the value of gradual decompression of the bladder preceding the prostatectomies of 173 consecutive unselected patients. There were 36 patients with acutely distended bladders and 137 with chronic retention. The latter group was composed of 118 patients with a low blood pressure and a group of 19 patients with high pressure (more than 160 mm. of mercury systolic). Analysis of these groups suggested the following disposition with regard to the propriety of decompression: Decompression of the acutely distended bladder can be dismissed, for the changes which must occur are those of physiologic counterbalance dependent on the normal protective mechanism of the urinary tract provided for such an emergency. Many of the patients with a low pressure in the chronic retention group were treated with gradual decompression, because it is the rule for the intern to "decompress when in doubt." The average fall of blood pressure in this group was 18 mm. of mercury. The blood pressure of most of these patients subsided gradually regardless of the institution of decompression, and the blood pressure was stabilized without untoward physical manifestations. Of the 19 patients whose systolic pressure on admission was above 160 mm. of mercury the hypertension of 15 was relieved. It must have been due to the chronic retention of urine. The author believes that gradual decompression is still a valuable procedure and is often a life-saving procedure for the prostatic patient with chronic urinary retention and hypertension. Pyelonephritis, often thought the actual cause of death, is undoubtedly a secondary complication precipitated by the too rapid evacuation of a chronically distended and infected bladder. Hypertension evidently occurs in a small group of prostatic patients because the upper part of the urinary tract is unable to dilate because of an anatomic factor: an intrarenal pelvis.

**Sulfathiazole as a Urinary Antiseptic.**—Helmholz studied the urinary antiseptic qualities of sulfathiazole and from 2,003 observations he states that sulfathiazole is bactericidal for the six most common urinary bacteria: Streptococcus faecalis, Staphylococcus aureus, Escherichia coli, Aerobacter aerogenes, Proteus ammoniae and Pseudomonas aeruginosa. A concentration of 200 mg. per hundred cubic centimeters should prove sufficient for the cure of practically all infections except Pseudomonas, which will probably require 300 mg. per hundred cubic centimeters. The effectiveness of the drug for the various bacteria on an ascending scale is as follows: Pseudomonas aeruginosa, Streptococcus faecalis, Escherichia coli, Aerobacter aerogenes, Proteus ammoniae and Staphylococcus aureus. The bactericidal range is from 300 to 25 mg. per hundred cubic centimeters. There is some variation in the effect of the drug at various $p_H$ levels, particularly for Streptococcus faecalis.

## Nebraska State Medical Journal, Lincoln

**26**:37-76 (Feb.) 1941

Advances in Our Knowledge of Liver Disease and Some Associated Clinical Applications. F. C. Helwig, Kansas City, Mo.—p. 37.
Treatment of Chronic Arthritis with Gold Sodium Thiosulfate. J. C. Thompson and C. K. Elliott, Lincoln.—p. 44.
Significance of Cardiac Enlargement in Progress and Prognosis of Hypertensive Heart Disease. L. Stark, Norfolk.—p. 51.
Hypertensive Heart Disease. A. D. Cloyd, Omaha.—p. 53.
Cardiac Failure and Hypertension: Case Report. J. P. Tollman, Omaha.—p. 56.
Depressions. W. A. Muehlig, Omaha.—p. 58.
Grain Dust as Occupational Hazard: Review. S. S. Pinto, Boston.—p. 60.

## New England Journal of Medicine, Boston

**224**:139-178 (Jan. 23) 1941

Head Injuries: Observations Based on Study of 554 Patients. W. Pickles, Providence, R. I.—p. 139.
*Enterobiasis: Its Incidence and Symptomatology in a Group of 505 Children. T. H. Weller and C. W. Sorenson, Boston.—p. 143.
Congenital Anomalies of Pelvic Adnexa. J. D. Ferrone, Boston.—p. 147.
Physiotherapy in Rheumatoid Arthritis. W. A. Elliston, Marie F. Silber and Dorothy Grover, Boston.—p. 150.
Pedunculated Endometrial Cyst of Uterus: Report of Case. A. A. Levi, Boston.—p. 156.
Abdominal Surgery. A. W. Allen, Boston.—p. 159.

**Enterobiasis.**—Weller and Sorenson endeavored to determine the incidence of Enterobius vermicularis infection in the New England area by examining 505 white children from 2 to 12 years of age admitted to the medical wards (118) or the outpatient department (387) of the Children's Hospital. The patients were consecutive with no attention being paid to age, sex or type of illness. The anal swabs were examined on the same day on which they were obtained. The swabs were never taken before the morning toilet. The symptoms of the 387 outpatients were studied. The blood studies done as a part of the routine medical examination of the 118 ward children were reviewed for any eosinophilia. Among the 505 children examined 97 (19 per cent) were found to have enterobiasis. An analysis of the data showed that the average number of children less than 14 years of age in the families of 91 of the positive cases was 3.1; in the 396 negative cases the average number was 2.2. Additional data showed that for the 91 positive cases the average total family size was 5.5 persons and for the 394 negative children 4.6 persons. Forty-two of the 387 outpatients gave a history of previous pinworm infection, and of these 16 proved to be positive on swab examination. Of the 345 children with no previous history of infection, 56 were positive. In the present series 23 per cent of the girls and 15 per cent of the boys were infected. Enterobiasis was less common among the younger children. The children with pinworms did not complain of gastrointestinal symptoms more frequently than the uninfected children, with the exception of a slight but not significant variation in "loss of appetite." Likewise, vulvitis and night restlessness occurred with the same frequency. Anal pruritus, perianal cutaneous lesions, enuresis and masturbation were a little more common among the positive group. The variation was not statistically significant. The relatively asymptomatic nature of the infection would appear to indicate that subclinical enterobiasis is a common condition. Of the 72 positive cases among the 387 outpatients 64 per cent had no gastrointestinal symptoms, 80 per cent no perineal symptoms, 58 per cent no nervous symptoms and 36 per cent none of these three symptoms. This does not mean that the pinworm is incapable of causing symptoms—4 cases showed a symptom complex approximating the classic description of enterobiasis. At least two factors combine to overemphasize the importance of symptoms: the symptoms tend to be misleading and in the past only those patients showing symptoms have been studied. Further work is necessary to determine why some patients have symptoms and others do not. The intensity of infection, the nervous constitution of the infected person and an allergic response to products of the parasite may be important.

## Philippine Medical Association Journal, Manila

**20**:693-756 (Dec.) 1940

Improved Technic for Suprapubic Cystolithotomy. G. Santos-Cuyugan and P. T. Nery, Manila.—p. 693.
Studies on Peptic Ulcer. P. Ignacio and J. A. Silva, Manila.—p. 699.
Differential Diagnosis of Jaundice. H. Kaunitz, Manila.—p. 709.

## Texas State Journal of Medicine, Fort Worth

**36**:591-654 (Jan.) 1941

X-Ray Diagnosis of Diseases of Esophagus. D. Spangler, Dallas.—p. 598.
Fracture of Femur. S. A. Collom Jr., Texarkana.—p. 601.
Recent Progress in Anesthesia. E. A. Rovenstine, New York.—p. 603.
Management of Calculi in Lower Ureter. J. R. Reagan, Wichita Falls.—p. 608.
*Relationship Between Skin Cancer and Occupation in Texas: Review of 1,569 Verified Lesions Occurring in 1,190 Patients. C. Phillips, Temple.—p. 613.
Carcinoma of Gallbladder. I. L. Van Zandt, Fort Worth.—p. 616.
Compulsory Laboratory Tests. A. M. Clarkson, Austin.—p. 618.
Preoperative Radiation of Breast Cancer. E. V. Powell, Fort Worth.—p. 620.
The Place of Orthoptics in Treatment of Extraocular Muscle Deficiencies. C. R. Lees, Fort Worth.—p. 623.
Glands of Posterior Female Urethra. G. T. Caldwell, Dallas.—p. 627.
Treatment of Chronic Infectious Sinusitis. H. Hosen and F. Tyner, Port Arthur.—p. 633.

**Cutaneous Cancer and Occupation.**—Phillips reports the particulars of the study carried out by the United States Public Health Service as to the incidence of occupational cutaneous cancer in Texas. The data that he analyzes are those of occupation, as they pertained to 1,190 individuals having 1,569 microscopically verified cutaneous cancers. The cases were obtained from 187,831 registrations of the Scott and White Hospital and the Gulf, Colorado and Santa Fe Railroad Hospital in Temple, Texas, from January 1920 to January 1940. In order of frequency these lesions were found to be basal cell epithelioma, squamous cell epithelioma, melanoma, mixed basal and squamous cell epithelioma, transitional cell epithelioma, adenocarcinoma of the sweat or sebaceous glands, fibroxanthosarcoma and epithelioma in sebaceous cysts. The occupations of the largest group of these patients was outdoor work: farming and ranching. The work of housewives comes next in order, followed by various business activities requiring moderate outdoor life. The professions were next, followed by laborers and carpenters. The railroad and petroleum industries furnished few cutaneous cancers. There were 738 basal cell epitheliomas among 546 patients; 34.7 per cent belonged to the farmer-rancher classification. All but 12.2 per cent of the total were traced as to occupation. The squamous cell epitheliomas accounted for 644 lesions and 596 patients; 49.1 per cent of these patients were either farmers or ranchers. There were 128 housewives in the basal cell group as against 70 in the squamous cell group. The occupation of 15.8 per cent of these patients was not known. Study of 124 persons having 143 melanomas confirms previous observations that occupation apparently has no particular relationship as to etiology and that women are as likely to have the neoplasm as men. Melanoma does not appear to be much stimulated by sunshine. Seventeen patients had 19 cancers of the mixed basal and squamous cell type; 48.5 per cent were farmers and ranchers. There were 19 transitional cell epitheliomas among 16 patients. The incidence for outdoor exposure was 50 per cent. There were 6 carcinomas in the sweat and sebaceous glands and in the hair follicle epithelium; 2 of the patients were farmers and 1 was a rancher. Farmer-rancher occupation amounted to 39.9 per cent of the whole series of 1,190 persons. When farm and ranch housewives are added to that of the farmer-rancher men the figure rises to 46.05 per cent.

## FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Journal of Radiology, London

**14**:43-78 (Feb.) 1941

Mass Radiography of Chest, et Alia. S. C. Shanks.—p. 45.
Experiments in X-Ray Screen Photography with Control Direct Radiographs. K. C. Clark, G. R. M. Cordiner and P. Ellman.—p. 54.
Effect of Gamma Radiation on Cells in Vivo: Part III. Spaced Radiation. F. G. Spear and A. Glücksmann.—p. 65.
Reflecting Screen Facilitating Removal of Foreign Bodies and Positioning in Radiography. H. Miller.—p. 77.

### British Medical Journal, London

**1**:73-106 (Jan. 18) 1941

Trends in Nutrition. J. B. Orr.—p. 73.
Pulmonary Concussion ("Blast") Due to High Explosive: Case. G. Hadfield and R. V. Christie.—p. 77.
*Hemorrhage into Lungs in Cases of Death Due to Trauma. Joan M. Ross.—p. 79.
Familial Periodic Paralysis. J. M. Holmes.—p. 80.
Some Public Health Considerations Consequent on a Large Scale Air Raid. A. Massey.—p. 82.
Inoculation with T. A. B. C. Vaccine in Southampton: Analysis of Reactions. H. C. M. Williams.—p. 84.

**Hemorrhage into Lungs in Deaths Due to Trauma.**—Ross reviews hemorrhagic pulmonary lesions due to trauma that are seen in peacetime. Blood may be inhaled after hemorrhage from lesions of the upper air passages or nasopharynx or even from a fracture of the base of the skull. The lung tissue is undamaged, but in cases in which the inhaled blood is not immediately fatal it will have coagulated. A lacerated wound of the lung associated with hemorrhage may occur after the wall of the chest is penetrated by a sharp object or by a broken rib. The pulmonary appearance varies according to whether the penetrating object or rib remains in the lung while respiration continues and the resultant hemorrhage varies with circumstances. It may spread for some little distance beyond the margins of the wound. Hemorrhagic lesions (contusions or bruises) of the lung may be found in cases which show no penetrating wound of the chest or broken ribs. Such cases are comparatively frequent in road accidents after violent impact of a moving vehicle or when the victim is hurled against a hard obstacle such as a wall. In children it is most often associated with a history of the rapid passage of a wheel over the thorax. The hemorrhagic lesion in the lung takes the form of a contusion or localized bruise. Microscopically there is rupture of the pulmonary tissue and hemorrhage into the damaged area. In another group of cases death may be said to be due to asphyxia. Asphyxia from any cause produces hemorrhagic lesions in the lungs. The lesions consist of punctiform subpleural hemorrhagic patches. These ecchymoses—Tardieu's spots—are sometimes separated, sometimes in groups. In asphyxia due to pressure on the trachea (strangulation) there will be frothy blood-stained mucous fluid in the upper air passages and intense congestion of the lungs, and, in addition to Tardieu's spots, larger patches of hemorrhage may be present. The lungs of patients dying of fat embolism following crushing injuries are typically deeply congested throughout with no localized hemorrhagic patches. These hemorrhagic lesions seen in peacetime are compared to lesions produced as the result of the detonation of high explosives. Flying missiles produce penetrating wounds of the chest and lacerated wounds of the lung which differ in no way, except in degree, from peacetime penetrating lesions. Impact damage from these missiles or forcible hurling of the victim by the force of the explosion (blast) may produce contusions of the lung similar to those of road accidents. These contusions may be present without visible external injury. Cases of asphyxia are frequent under bombing conditions, when persons may be buried under débris. Dust may have been inhaled or the victim may have been pinned under a pile of débris. In the former group the postmortem observations are those of asphyxia only. In the other group the picture is that of compression asphyxia. In these cases death has presumably been slow, with attempts at respiration. In such conditions rib markings have been observed; a dark purple line of the size and direction of the rib. In addition these cases showed some scattered hemorrhages into the lung, with subpleural Tardieu's spots. There are localized areas of collapse. Microscopically there is disruption of the alveolar walls when the rib marking has been sectioned. There is fresh blood in the alveoli, and clotting may have begun in some areas. Elsewhere there is general congestion of all the capillaries in the alveolar walls and thromboses in the smaller arterioles and veins. Edema is present in many areas. Another group of wartime injuries without parallel peacetime lesions is that in which death occurred without or with only trifling external injury, but in which intrapulmonary hemorrhage is common. These cases are found near the site of explosion. The condition may well be called "hemorrhagic pulmonary concussion." When these pulmonary lesions have been found and there have been external markings of small splinters and the like, the superficial lesions are on the anterior surface of the body. The hemorrhagic areas are scattered through and the two lungs are affected to the same degree. Edema as in compression asphyxia is not a feature. Thromboses are not present. Further, the hemorrhage is fresh and clotting has not occurred. There is widespread and intense capillary congestion in the lungs. There is hemorrhage into the walls of the small bronchioles but no bleeding into the walls of the bronchi. There is some overdistention of air vesicles and respiratory bronchioles in some cases with no anatomic relation to the ribs. It is not known how many victims of air raids, dying with gross fatal injury, apparent externally, show the foregoing pulmonary lesions. The lesions are distinct from heretofore familiar conditions. They are distinguishable from lesions of compression asphyxia or pulmonary hemorrhage from impact of solids against the thoracic wall.

### Edinburgh Medical Journal

**48**:73-144 (Feb.) 1941

War and Skin Disease. G. H. Percival.—p. 73.
Cause and Treatment of Lethal Factors in Burns. W. C. Wilson.—p. 85.
Modern Methods of Treating Lung Tuberculosis. C. Cameron.—p. 94.
Spread of Tuberculous Infection in the Child and Its Relation to Disease in the Adult. W. T. Munro.—p. 115.

### Journal of Mental Science, London

**87**:1-156 (Jan.) 1941

Recent Advances in Etiology and Treatment of Neurosyphilis. E. L. Hutton.—p. 1.
Occurrence and Significance of Small Vascular Lesions in Brain. F. A. Pickworth. —p. 50.
Subacute Combined Degeneration of Unknown Origin with Extensive Involvement of Brain. R. E. Hemphill and E. Stengel.—p. 77.
The 1916 Stanford Binet Vocabulary Test Revised for Rapid Routine Practice. M. B. Brody.—p. 88.
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### Journal of Physiology, Cambridge

**99**:157-264 (Jan.) 1941. **Partial Index**

Influence of Sympathetic Nervous System on Capillary Permeability. D. Engel.—p. 161.
Effect of Adrenalin on Nerve Action Potentials. E. Bülbring and D. Whitteridge.—p. 201.
Utilization of Fat by Aglycemic Mammalian Heart. E. W. H. Cruickshank and H. W. Kosterlitz.—p. 208.
Vasodilator Action of Potassium. G. S. Dawes.—p. 224.
Effect of Adrenalectomy on Blood Histamine of Rabbits. A. Wilson.—p. 241.
Distribution of Pituitary Antidiuretic Hormone Throughout Vertebrate Series. H. Heller.—p. 246.

### South African Medical Journal, Cape Town

**15**:21-40 (Jan. 25) 1941

Primary Infective Polyneuritis. B. F. Sampson.—p. 23.
Tuberculous Infection in Dermoid Cyst of Ovary: Case. G. D. Shaw and O. S. Heyns.—p. 25.
Cases from Surgical Unit, University of Witwatersrand, Johannesburg: Case of Simple Tumor of Upper Jaw. L. E. Gellman and J. F. P. Erasmus.—p. 28.
Series of Cases of Murine Type Typhus in Northern Rhodesia: Preliminary Report. J. H. Dowds.—p. 30.

## Difesa Sociale, Rome

**19**:825-902 (Sept.) 1940. **Partial Index**

*Relations Between Pulmonary Tuberculosis and Menstruation: Clinical and Statistical Study. M. Valli.—p. 825.

**Pulmonary Tuberculosis and Menstruation.**—Valli made observations on 1,000 women with pulmonary tuberculosis and normal menstrual function. Menstruation appeared at the age of 14 in the majority of cases, before 10 in 2 and after 19 in 2. There was no relation between the age of the patient at the appearance of menstruation and the more or less acute onset and severity of tuberculosis, with the possible exception of women who began to menstruate late. In the latter group the number of grave cases was greater. Amenorrhea was the most frequent irregularity. It was improved when the tuberculous process improved. Fever, especially premenstrual, hemoptysis and focal reactions were the most frequent disorders observed during menstruation. Menstrual fever was frequent in women with grave forms of pulmonary tuberculosis. Fever was the only symptom in half the number of patients in the febrile group. In the other half it was combined with transient focal reactions which aggravated the pulmonary disease and the general conditions of the patients in 23. Hemoptysis occurred in 82 patients, either in the presence or in the absence of fever. Acute bronchogenic tuberculous dissemination of the disease took place in 19. Headache, nausea, vomiting, abdominal and lumbar pain and fast pulse were observed in 112. The author has previously reported that the resistance of the body diminished during menstruation in tuberculous women, as manifested by the variations in tuberculin allergy, increased sedimentation speed of the erythrocytes and increased tuberculous bacillemia during menstruation.

## Deutsche medizinische Wochenschrift, Leipzig

**66**:1177-1204 (Oct. 25) 1940

Vitamin C and Clinical Experience. H. Rietschel.—p. 1177.
*Question of "Angioneurotic Hematuria" in Young Men with Unstable Vasomotor System. H. A. Heinsen.—p. 1181.
*Early Diagnosis and Treatment of Addison's Disease. A. Dzsinich. —p. 1183.
Case of Intermittent Dyspraxia and Dysphonia. P. Duus and H. R. Frank.—p. 1185.
*Prognosis of Ulcerative Colitis. N. Henning.—p. 1187.
Is the Polarographic Method Specific for Recognition of Carcinoma? E. Chytrek.—p. 1190.
Meningitis Caused by Bacterium Enteritidis Gärtner. J. Meyer-Rohn. —p. 1193.
Significance of Sternal Puncture in Differential Diagnosis of Lead Poisoning. A. Bentsath and S. Varga.—p. 1194.

**"Angioneurotic Hematuria" in Young Men.**—In the course of examining two thousand young men for aviation service, Heinsen observed that three hundred and fifty had a microscopically demonstrable hematuria. This number included neither those with massive hemorrhages nor those in whom notable amounts of protein, casts or leukocytes in addition to erythrocytes indicated a nephritis, pyelitis or inflammation of the urinary passages, but only those in whom the microscopically demonstrable hematuria was the only abnormal sign. The hematuria was slight. Some of these young men were repeatedly examined. In many instances subsequent tests failed to disclose a hematuria and urologic examination disclosed no organic defects that could explain the hematuria. The author cites factors indicative of a hematuria on a vasomotor basis. Nearly all the young men whose urine contained erythrocytes were hardly 20 years old, and about two thirds had the signs of hyperirritability of the vasomotor system, such as hyperhidrosis, coarse tremor and severe dermographism. The fact that the physical examination was of vital importance for the career of these young men made them even more excited. An analogy is presented by polyuria nervosa spastica occurring in easily excitable persons and by the "urine flood" following an attack of migraine. Just as a decrease in the tonus of vasoconstrictive nerves can lead to polyuria as the result of increased blood perfusion of the kidney, hyperemia may cause stasis and diapedesis. He presumes that great instability of the vasomotor nervous system is the cause of hematuria in these otherwise healthy young men. Their kidneys are not diseased and their vasolability is physiologic rather than pathologic. The author warns against including all microscopic hematurias in young persons in the category of "angioneurotic hematuria." Every hematuria must be regarded as a serious symptom and subject to careful urologic examination. Only if organic changes can be definitely excluded and other factors suggest a vasomotor basis should angioneurotic hematuria be considered.

**Diagnosis and Treatment of Addison's Disease.**—Recognition of a fully developed Addison's disease is comparatively simple, but the diagnosis of early and latent forms, as well as the exclusion of other diseases, is difficult. This difficulty, according to Dzsinich, is due to the fact that the symptoms of incipient adrenal insufficiency are meager and insignificant and that functional tests are not sufficiently exact to enable one to detect a beginning adrenal insufficiency. Differential diagnosis is made possible by the detection of the objective symptoms: severe emaciation, weakness, low blood pressure, low blood sugar, subnormal temperature, circulatory changes, brown discoloration of the skin, severe gastrointestinal disturbances and disturbances in the sexual life. These symptoms are not always present in the incipient stage and some of them are present in other disorders. Pigmentation which together with disturbances in the carbohydrate metabolism and hypotension is one of the most characteristic symptoms of chronic adrenal insufficiency, is found also in carcinoma of the abdominal organs, anemias, leukemias, cirrhoses, chronic intoxications (silver, arsenic) and avitaminoses. The author cites facts which prove that the hormone of the adrenal cortex plays an important part in the water, mineral, protein, carbohydrate and fat metabolisms of the organism. The examination of these interrelations is difficult for the practitioner. The author suggests that all provocative tests be made in hospitals because they may elicit crises. Withdrawal of sodium chloride is a test which usually results in exacerbation, but the fact that some tolerate this test well makes it less reliable. Another test is a diet with a high potassium content; this likewise intensifies the symptoms of Addison's disease. For the treatment of the disease the author recommends large doses of adrenal cortex extract and infusion of hypertonic solution of sodium chloride, to which sodium citrate (0.5 per cent) and dextrose solution (10 per cent) may be added. He also gives vitamin C, alkaline substances and a diet deficient in potassium. The treatment must be individualized. When it can be demonstrated that syphilis is the cause, antisyphilitic treatment is indicated. Surgical interventions on patients with Addison's disease are no longer as hazardous as they were formerly, when even extraction of a tooth could be fatal. The author prepares his patients for the operation with a course of intense treatment.

**Prognosis of Ulcerative Colitis.**—Henning points out that ulcerative colitis is always a serious disease whose prognosis requires caution, particularly in view of the unpredictable complications. Although small hemorrhages in the form of mucosanguineous stools are present in all cases, massive hemorrhages, particularly if they are recurrent, may be fatal. Perforation with fatal peritonitis and paralytic ileus of the entire colon with peritonitis are rare complications. Frequent sequels are the cicatricial changes, which may be localized or diffuse. The localized lesions may give the impression of stenosis, which usually forms in the sigmoid or rectum. Gallart Mones regards rectal stenosis as one of the most frequent complications. If the shrinking process is diffuse, the lumen may become small and the haustra may disappear. There may even be shrinkage in length. Pericolitic, perisigmoiditic and periproctitic abscesses are rare complications. Colonic polyps concur with colitis, but the author asserts that the inflammatory pseudopolyps may completely disappear with improvement of the colitis. Secondary anemia, rheumatoids, neuritis, sepsis with endocarditis, suppurating parotitis and acute yellow atrophy of the liver are some of the remote complications. As a rare complication in his own material the author mentions multiple thromboses in the extremities and cerebral embolism with hemiplegia. Even if there are no complications, the disease has unpredictable fluctuations. Certain general clinical aspects furnish some prognostic hints. Although the fever at the onset of an acute case is of no significance, an unfavorable prognosis is indicated if it does not subside after suitable treatment has been continued for from four to six weeks. The same applies to loss of weight, exsiccosis, tachycardia, anemia and severe prostration. The endoscopic aspects are of some value even though they do not disclose the entire extent of the lesion. Extensive and deep ulcerations with

fibrin, pus and pseudopolyps require more restraint in evaluation than do the flat erosions. The author differentiates between anatomic and functional cure. Retroscopic examinations disclose that complete anatomic cure is unusual. Roentgenoscopy provides reliable prognostic information about the extent of the ulceration. Cases in which the process involves large portions of the colon have a more unfavorable prognosis than have those in which the ulcerations are limited to the rectum. Cases in which the ascending colon is involved have a mortality of 50 per cent (Snapper, Lockhart-Mummery and the author's observations). The prognosis in many cases of ulcerative colitis is to a great extent determined by the treatment. Early and persistent treatment in the form of bed rest and a mixed diet without roughage often restores the patients to such an extent that they become able to work again. The author cites statistics on the mortality and thinks that the great differences between the figures are due to the composition of the case material.

## Bulletin of the Naval Medical Association, Tokyo

**29**:751-832 (Nov. 15) 1940. **Partial Index**

*Diagnostic Significance of Serum Reactions in Malaria. T. Miyagi—p. 788.
*Urinary Excretion of Vitamin $B_1$ in Beriberi Patients. I. Ishihara.—p. 804.

**Serum Reactions in Malaria.**—Miyagi reports the results of serum reactions in 27 cases of tertian malaria, 17 plasmodium carriers, 110 cases of cured malaria and 141 healthy subjects. The reactions tested are (1) the melanoflocculation test of Henry, (2) the fibrin test of Livieratio, Vagliano and Kokaraki and (3) the congo red test of Ishioka and Akashi. The Henry reaction was positive in 80.4 per cent of active cases of tertian malaria, while the congo red test gave 80 per cent positive reactions. In chronic cases the percentage of positive reactions was somewhat lower (47.1 per cent for Henry's reaction and 52.9 per cent for the congo red test). As a rule the patients who had had splenomegaly gave positive reactions to these tests. The author expresses the opinion that the tests are not specific immune reactions but merely the phenomena of altered colloid stability.

**Urinary Excretion of Vitamin $B_1$.**—Employing the thiochrome method of Otto and Rühmekorb, Ishihara made quantitative determinations of urinary excretion of vitamin $B_1$ in 37 patients suffering from beriberi. This method, by use of a Pulfrich photometer, can be easily carried out in the average laboratory. The amount of the vitamin excreted was calculated for twenty-four hours. In beriberi patients the author found the average daily excretion of vitamin $B_1$ to be 50 micrograms or less, but increasing when these patients received a diet rich in this vitamin. In spite of the persistence of clinical manifestations, the daily excretion increased to 300-400 micrograms. From these observations it may be said that a low urinary excretion of vitamin $B_1$ is diagnostic of either active or latent beriberi.

## Journal of Oriental Medicine, Mukden, Manchukuo

**32**:443-594 (March) 1940. **Partial Index**

*Statistical Studies on Genitourinary Tuberculosis. A. Okada.—p. 491.

**Genitourinary Tuberculosis.**—Okada reports the results of cystoscopies in 165 cases of urogenital tuberculosis. The greater number of patients (93 per cent) showed definite changes of the bladder mucosa at the urethral orifice, followed in order by the pathologic condition in the trigon, lateral wall, posterior wall, neck, fundus and the anterior wall. No relationship seemed to exist between the sex or the side of the diseased kidney and the extent of bladder disease. The bladder capacity appeared to decrease in direct proportion to the extent of the disease. In all cases, irrespective of the degree of disease, the earliest manifestations of the disease were frequency of micturition and pain on urination. Hematuria and lumbar pain were less frequent. In mild cases pyuria was also frequent. With the increase in cystoscopic signs, the degree of positive findings on palpation of the bladder also increased. No definite relation, however, was observed between the cystoscopic findings and the presence or absence of genital tuberculosis. The ease with which the urethral catheter could be inserted decreased with the progress of the bladder disease. Chromocystoscopy showed a delay on the affected side as compared with the normal side; the excretion of indigo carmine was evident in ten minutes from the healthy side in 93.8 per cent of cases, whereas from the affected side the appearance of the dye was delayed beyond ten minutes in 51.4 per cent. The amount of phenolsulfonphthalein excreted from the normal side in fifteen minutes was over 15 per cent in 85.3 per cent of cases, while it was less than 15 per cent in 70.7 per cent of cases. Catheterized urine collected from the affected side was turbid and contained pus clumps, albumin and tubercle bacilli. The study includes roentgenographic examination of the genito-urinary tract by intravenous and retrograde pyelocystography. The specific gravity of the urine, determined after intravenous pyelography and compared with the phenolsulfonphthalein test, in conjunction with roentgenographic examination, were found to be valuable in estimating the total renal function. The cystogram, however, was useful only in cases with moderately advanced tuberculosis of the urogenital system. By the combination of all these methods positive diagnoses were established in 139 cases of unilateral tuberculosis of kidney, 34 of bilateral involvement and 2 of tuberculosis of the bladder, while in 20 cases the affected side eluded diagnosis. Of the unilateral kidney tuberculosis, 79.8 per cent of the cases were found to be operable and 20.2 per cent inoperable. As to the relationship between the changes in the extirpated kidneys and the clinical symptoms, Okada found the predominance of fully developed tuberculosis (60.5 per cent), followed by the early stage of changes (29.6 per cent) and the terminal stage (9.9 per cent). In the early stage of disease the involved kidney is of normal size, but it gradually diminishes with the progress of the infection. The changes in the renal pelvis and in the size of the ureter parallel one another. The healing of operative wounds took place on an average of two months or less in nearly half of the cases (46.8 per cent). The survival time after the operation was three years in 47.4 per cent; the prognosis was most favorable in patients with minimal pathologic change in the lung. Permanent cure (survival time of over three years) was encountered in 55.1 per cent of all surgical cases; in cases in which for any reason operation was not performed, the mortality was high (81.1 per cent).

## Taiwan Igakkai Zassi, Taihoku, Formosa

**39**:1739-1946 (Nov.) 1940. **Partial Index**

*Takata Reaction in Malarian Serums. T. Ou.—p. 1825.
*Serodiagnosis of Malaria. M. Asai.—p. 1836.

**Takata Reaction in Malaria.**—Using the modified Jezler technic, Ou performed Takata tests on 116 malaria patients in various stages of infection, with 24 normal subjects as controls. In acute cases the reaction was negative in every instance; the incidence of positive reactions increased with the chronicity of the disease. In patients with hepatomegaly the reaction was usually positive but became negative with improvement following specific therapy. If turbidity and transient flocculation are regarded as positive reactions, the minute changes which take place in the serums in acute cases can be detected and the progress of such changes may be followed as the disease becomes more chronic. In chronic malaria with hepatomegaly such reactions are 100 per cent positive. No agreement in results between the Takata reaction and the Henry test was detectable in acute cases of malaria, but in chronic cases both tests frequently give positive results. From these experiences the author believes that in malaria serums some definite changes in colloid chemistry occur, the changes being relatively slight in acute stage and increasing with the progress of the disease. No parallel relationship was demonstrated between the liver function test (azorubin S method) and the Takata reaction.

**Serodiagnosis of Malaria.**—Asai has found that a complicated mixture such as employed in Henry's reaction is unnecessary, since a simple mixture of 1 cc. of retinal melanin and 0.2 cc. of serum is as satisfactory. The melanin was prepared from the buffalo retina and diluted ten times with alkaline water. In testing serums from 133 patients with retinal melanin, artificial melanin and alkaline water, he found the first of these reagents to give coarse flocculation in chronic cases, and the second reacted with finer precipitation mostly in acute cases, while the third was effective only in a small percentage of the chronic cases. The author believes that the melanin tests are valuable in the serodiagnosis of malaria at all stages of the disease.

# Book Notices

**The Working Environment and the Health of Workers in Bituminous Coal Mines, Nonferrous Metal Mines, and Nonferrous Metal Smelters in Utah.** By the Division of Industrial Hygiene, National Institute of Health, U. S. Public Health Service and the Utah State Board of Health. Paper. Pp. 310, with 38 illustrations. Salt Lake City: Industrial Hygiene Division, Utah State Board of Health, 1940.

This report is a notable one in the series of joint investigations by the U. S. Public Health Service and individual states. As the result of a preliminary survey by the federal agency in 1936 it was discovered that the major industrial health hazards in this state occurred in bituminous coal mines, nonferrous metal mines and nonferrous smelters and involved exposures to dusts of silica, lead and other metals and to various fumes and gases. Three representative coal mines, three metal mines and two smelters, employing in all two thousand eight hundred and thirty-nine men, were selected for detailed study. This involved complete physical examination of all employees with roentgenograms of their chests, serologic tests for syphilis, blood examinations for evidence of lead absorption where indicated, a routine urine examination in all cases and in 961 a spectroscopic examination of the urine for lead. Engineering studies of the environments of each plant pointed out places where hazards from silica, lead, arsenic, cadmium, sulfur dioxide, carbon monoxide, carbon dioxide, hydrogen sulfide, hydrogen cyanide and methane might be anticipated. Correlation of these findings with evidence of disease in previously exposed employees permitted the establishment of certain tentative standards of safe concentrations for these irritants in the local industries. In accordance with its agreement on the completion of the preliminary survey, the state of Utah has appropriated $25,000 toward the development of a permanent industrial hygiene service for the continued inspection and control of its industrial hazards.

This report, covering all details of the causation, diagnosis and prognosis of the diseases involved, constitutes an excellent textbook. Its detailed data constitute a valuable contribution to industrial hygiene. The volume would be a useful textbook for physicians practicing in the state. It contains eleven illustrations of characteristic roentgenograms of silicosis.

In the bituminous coal mines the major health hazard was from silicosis, but in this state as elsewhere the number of cases was small. Among five hundred and forty-five employees in three mines (about one fifth of the total employed in the state) the total incidence of anthracosilicosis was 4.6 per cent. The incidence of reinfection tuberculosis, 2.6 per cent, was little above that of the general population.

Among seven hundred and twenty-seven metal miners working in rock whose free silica content varied from insignificant quantities to over 99 per cent, there were 9.1 per cent with definite silicosis and another 5.8 per cent in a presilicotic condition. The total incidence of reinfection tuberculosis was low, only 2.5 per cent. In the silicotic subjects alone it was nearly 14 per cent, but with this group excluded only 1 per cent of the remaining miners showed evidence of this infection.

Lead poisoning was the next most frequent industrial disease, and this involved chiefly the miners at the face. During a period of five years preceding the survey twenty men reported disabling attacks of plumbism and at the time seventy-five had signs of lead absorption. The only other significant condition discovered was a mild dermatitis attributed to sulfide ores, which occurred in a few of the miners. Cardiovascular disease was of normal frequency for the age group.

In smelters there was a silica hazard in the concentrating department, a lead hazard, particularly prevalent in the bag houses, where atmospheric concentrations as high as 6,000 mg. in 10 cubic meters of air were measured, a carbon monoxide hazard in furnace charging and a sulfur dioxide hazard in many different departments. Excluding men who had had two or more years' exposure elsewhere the crude silicosis rate was 2.7 per cent among one thousand three hundred and ninety-one employees. In the concentrating departments alone exposures of twenty or more years caused silicosis in 22.6 per cent of the employees. No cases of acute plumbism were discovered, but 2.9 per cent of the group had clinical manifestations of lead absorption. Histories of lead poisoning in the past were infrequent. The only possible evidence of arsenical poisoning was the discovery of 75 cases of nasal septal perforation. Conjunctivitis, rhinitis, pharyngitis and gastrointestinal symptoms that may have been due in part to sulfur dioxide to exposure were frequent.

The most striking feature of the smelter survey was the high frequency of adult type tuberculosis with a crude rate of 5.4 per cent. No particular group was affected, and even after the silicotic members had been excluded the rate for the rest of the men was 4.9 per cent. The cause could not be ascertained. It was concluded that if the inhalation of sulfur dioxide was of importance it was probably only one of several factors involved.

The recommendations for the control of these hazards conform to generally accepted practice. The standards of permissible concentrations of dusts and gas are based on local experience but they also are in conformity with measures applied elsewhere.

**Structural and Other Precautions Against Air Raid Risks in Hospitals.** Issued by the Ministry of Health and the Department of Health for Scotland. Emergency Medical Services Memorandum No. 1. Paper. Price, 10 cents; 3d. Pp. 12. New York: British Library of Information; London: His Majesty's Stationery Office, 1939.

The object of the memorandum is to indicate to hospital authorities what can be done to provide protection against air raid risks both in existing hospitals and in the planning and construction of new hospitals. The main sources of danger in an air raid are high explosive bombs, incendiary bombs and poison gas. There is, in addition, danger from falling fragments of antiaircraft shells. It is not practicable to provide hospital buildings which would resist a direct hit by a high explosive bomb or the blast effect of high explosive bombs falling close to them, though by careful planning and design something can be done to mitigate or localize the damage. Specific suggestions are made for the existing hospitals with regard to special protection of the ground floor, the windows and the roof. It is advised that hospitals in dangerous situations provide special shelter accommodation for the staff off duty and for such patients as may be able to use it. Basements or cellars may be suitable for this purpose. Trenches or arched steel shelters may be provided in the ground. It is essential to prevent the direct admission to hospitals of persons who have been contaminated with persistent gas, such as mustard gas, and to exclude gas-contaminated articles from the main hospital buildings. In the construction of new hospitals the selection of a site is of great importance. A frame building is the type that offers the greatest resistance to blast pressure and is least likely to collapse completely. The buildings should be of fire resisting material throughout. Roof light for the operating should be dispensed with, and windows should be designed in such a way that they can be readily blocked up. In large hospitals especially, additional or alternative operating rooms should be designated in as safe positions as possible. The basement may be so constructed as to be suitable for an air raid shelter.

**Dietetics Simplified: The Use of Foods in Health and Disease.** By L. Jean Bogert, Ph.D., Instructor in Experimental Medicine, Yale University, New Haven. With Laboratory Section by Mame T. Porter, M.A., Nutritionist, State Department of Social Welfare, Albany. Second edition. Fabrikoid. Price, $3. Pp. 742, with 76 illustrations. New York: Macmillan Company, 1940.

This is an elementary textbook on dietetics intended for use primarily by hospital dietitians, nurses in training and medical students. As might be expected, the larger part of the book is concerned with the discussion of various types of special diets. In addition the book contains an introductory discussion of the fundamentals of human nutrition and of the principles underlying the selection of adequate diets in normal conditions, among which are included infancy and pregnancy and lactation. To aid the classroom teacher a list of discussion questions and problems has been appended to each chapter, and there are included also plans for a series of laboratory lessons in general cookery and in methods of preparation of a variety of special diets. An appendix provides tables of food composition, including vitamin content, and height-weight tables for children and adults. The tables of food composition include data for canned and cooked as well as raw foods.

Largely because of the effort to simplify and condense the material which deals with normal nutrition and with diet under

normal conditions, a number of factual errors have been allowed to enter. Some of these errors were pointed out by an earlier reviewer and have not been corrected in the second edition. For example, on page 34 cocoa and chocolate are still incorrectly classified as foods rich in sugar, and fish in general is still listed as a food rich in fat (10 to 25 per cent). Apples are listed on page 135 as "among the best body alkalinizers" although there is published evidence to the contrary, while tomatoes and pineapple, which have been shown to be much more effective in reducing the alkalinity of the urine, have been omitted from the list. Also several of the recommendations for children's diets, particularly the advice to serve only cooked vegetables, and those finely minced or mashed, to children of 5 to 9 years of age are not in accord with the best modern pediatric practice. It is difficult to keep printed material abreast of the rapid developments in the field of the vitamins. However, it is unfortunate that in a book published as recently as this one has been chemical names of the vitamins have not been used, vitamin requirements have not been expressed in units of weight as well as in terms of biologic units, and the possibility of a deficiency of riboflavin in the diet has not been recognized. In the tables of food composition, vitamin potencies are expressed in terms only of biologic units. These inaccuracies and omissions mar the value of the book for use by the elementary student of nutrition or for the general reader. It should be valuable, however, for the primary purpose for which it was intended; that is, as a textbook for use in teaching elementary courses in diet therapy or diet in disease. The teacher should remember, however, that more extensive reading on the subject of the fundamentals of human nutrition is desirable for students who do not already have a good foundation in this subject.

**Elementary Atlas of Histology.** By Burton Bradley, M.B., Ch.M., M.R.C.S. With foreword by J. B. Cleland, M.D., Professor of Pathology, University of Adelaide, Adelaide. Fabrikoid. Price, 15s. Pp. 122, with 58 plates. Sydney & London: Angus & Robertson Limited, 1940.

This collection of rough sketches of representative microscopic fields of most of the organs is intended as "some sort of liaison between what the junior student sees with his eyes in the average preparation given out in classes and the very excellent descriptions in textbooks." In most colleges and medical schools in this country each student is required to make a series of rough sketches of zoological and histologic material like those in this book. This induces the student to label the structures seen in the microscopic preparation and tests his knowledge of what he has seen. He would not profit if the teacher identified the structures in his sketches, which would be the result of the use of this book. The reviewer is completely out of sympathy with attempts at spoon feeding and accordingly sees no value in a book such as this.

**Radiologic Physics.** By Charles Weyl, S. Reid Warren, Jr., and Dallett B. O'Neill, Moore School X-Ray Laboratory, Moore School of Electrical Engineering, University of Pennsylvania, Philadelphia. With a foreword by Eugene P. Pendergrass, M.D., Director of the Department of Radiology, University of Pennsylvania. Cloth. Price, $5.50. Pp. 459, with 166 illustrations. Springfield, Illinois, & Baltimore: Charles C. Thomas, 1941.

A general practitioner, thumbing through this volume and glancing hurriedly at the charts, curves, diagrams and tables, would probably come to the conclusion that this book is not written for him. A more careful reading of the work will convince him that it is still readable although it abounds with mathematical expressions, and much about physics can be learned even though the reader may not have a knowledge of mathematics. Because of the significant advance in the field of radiology and physical therapy, physics is now playing a greater role in the fundamentals of medicine. A practicing physician to be on his toes should now learn to interpret physical formulas the same as he does a chemical formula. The book is divided into two parts. The first part consists of the fundamentals of electromagnetism and electromagnetic devices. The second part deals specifically with radiant energy and its inner actions with matter. The fundamentals of electricity, magnetism and radiation are dealt with in a convincing manner. There are descriptions and diagrams of electromedical equipment such as x-ray hook-ups, diathermy and testing equipment. There are a large number of diagrams of instruments for measuring electrical and radiation quantities. The second part concerns x-ray radiation almost entirely although there is a chapter on the disintegration of matter, radioactive in molecular physics. This volume is probably more suitable for the student who wishes to specialize in radiology and, as it is stated in the foreword, "in order that a physician might develop and be worth his salt in the modern department of radiology, it is necessary for him to master at least the fundamentals of modern physics. . . ." Chapter 1, on scientific method, contains fundamental information every physician should know and appreciate. This volume would serve as a good textbook in school where radiology is taught and would also be an excellent reference work for the library of such a school.

**Blutdruckmessung und Kreislauf in den Arterien des Menschen: Geschichte und heutige Lage der Probleme neue Lösungsversuche.** Von Dr. Heinrich von Recklinghausen. Kreislauf-Bücherei. Herausgegeben in Verbindung mit der Deutschen Gesellschaft für Kreislaufforschung. Band IV. Paper. Price, 30 marks. Pp. 532, with 197 illustrations. Dresden & Leipzig: Theodor Steinkopff, 1940.

In this volume are considered determination of blood pressure of animals, indirect methods of determination of blood pressure such as palpation and auscultation, the influence of the arterial wall on determination of blood pressure and the various instruments for measuring blood pressure. Studies of pulse waves are considered in detail. There are chapters on direct measurement of blood pressure of man, and on hemodynamics. More than three hundred references are presented.

**The Officers' Guide: A Ready Reference on Customs and Correct Procedures Followed Within the Army Which Pertain to Commissioned Officers.** For the Use of All Officers of the Regular Army, National Guard and Officers' Reserve Corps. Fourth edition. Cloth. Price, $2.50. Pp. 383, with illustrations. Harrisburg, Pa.: Military Service Publishing Company, 1941.

A doctor in the Army is an officer. He has to know about customs and correct procedures from a military as well as a medical point of view. There is probably no other book available which gives all this information as compactly and as accurately as does this volume. The new medical officer can find here the customs that prevail. There is a chapter on pay and allowances, another on leaves of absence, promotion and retirement. There is information concerning life insurance, participation in post activities, an analysis of the Selective Service Act of 1940, and much other useful information. Indeed, the book is so up to date as to supply a complete list of Army posts with the type of assignments for each and the nearest town or city. An appendix provides a guide to military symbols and abbreviations, and there is a well constructed index.

**Trudy Ukrainskogo Mechnikovskogo Instituta.** Pod redaktsiey M. S. Segal i M. M. Tsekhmovitsera. Tom pyaty. [Works of Ukrainian Mechnikov Institute. Volume V.] Paper. Price, 17 rubles. Pp. 280, with illustrations. Kharkov: Izdanie Ukrainskogo Mechnikovskogo Instituta, 1940.

The volume is a collection of papers emanating from the Ukrain Mechnikov Institute. The papers are brief reports dealing with investigations on the bacteriologic, immunologic and related aspects of infectious diseases, in particular of diphtheria, scarlet fever, typhus, bacillary dysentery and rabies. The standard achieved is that of routine laboratory research. The text is in Russian. It should prove of interest to workers in this field.

**The American College of Physicians: Its First Quarter Century.** Historian: William Gerry Morgan, M.D., LL.D., Sc.D., Professor of Gastro-Enterology, Georgetown University School of Medicine, Washington, D. C. Cloth. Price, $2. Pp. 275, with illustrations. Philadelphia, 1940.

In addition to Dr. Morgan, whose long association with the American College of Physicians eminently qualifies him to write this book, it contains contributions from Edward R. Loveland, secretary of the college since 1926, Maurice C. Pincoffs, Walter L. Bierring, Charles F. Martin and James Alexander Miller. The history of the college is interwoven with the general medical events of the period from 1915 to the present and is an integral part of it. This book records the history of the college and the contributions of its most active officers. It is an excellent addition to the growing literature on American medical history.

# Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

## HEMORRHOIDECTOMY AND PELVIC SURGERY AFTER LABOR

*To the Editor:*—**In the interest of formulating a policy for guidance of a large hospital obstetric service, I should like your opinion of (1) hemorrhoidectomy immediately after the completion of the third stage of labor or hemorrhoidectomy two to seven days post partum; (2) anterior and/or posterior colporrhaphy with or without repair of old cervical lacerations immediately following the third stage, or the same procedures several days to one week later; (3) abdominal sterilization by an accepted form of tubal operation immediately after a vaginal delivery, or laparotomy several days to one week later for the same purpose in cases in which pregnancy is contraindicated, as for example by tuberculosis and chronic nephritis. Considerable discussion of these questions, without consistent conclusions, has taken place among several of our obstetricians. An opinion would be invaluable to our obstetric staff, which, in addition to obstetricians, has a large "courtesy" group.** M.D., New York.

ANSWER.—1. In general it is better practice not to do multiple operations at one time, but since experience has shown that third degree lacerations heal better when repaired directly after labor than later it would seem that little objection could be raised against hemorrhoidectomy just after the third stage. If an extensive repair of the pelvic floor is done it may be better to postpone the removal of hemorrhoids, because the two would require so many sutures that the vitality of the tissues might be so reduced as to cause sloughing or infection and embolism. The comfort of the woman afterward must also be considered. Further, the fact that the hemorrhoids go down considerably after the congestion due to pregnancy and labor is over would counsel conservative practice.

2. If a previously torn cervix is torn again it should be repaired right after the third stage. The same is to be said of perineal tears and, further, one may dissect the flaps a little more so as to reach the levator pillars and the intercolumnar fascia, thus to make a more anatomic repair; but it would be better to postpone an extensive dissection for the interim period or after active childbearing is past. The reasons for this conservatism are the dangers of hemorrhage, hematoma, infection and embolism, all of which have been found to be more common after these operations.

3. Tubal ligation for proper indication is best done within twelve hours after delivery. There is good reason for believing that bacteria invade the uterus during the puerperium and that they even get into the fallopian tubes. All who operate on the tubes after cesarean section have experienced cases of peritoneal irritation, fever or at least an increase of pain, which indicate that something has been stirred up.

In general if these operations of expediency cannot be done immediately after delivery they should be postponed until the parturient canal, indeed the whole pelvis, has had time to cleanse itself and all local immunities, disturbed by pregnancy and labor, are reestablished.

Expediency for the patient is not a good indication for operation under the circumstances named, and indeed it rarely is, while expediency for the physician is even less an indication and more rarely, if ever, may be invoked.

## PTYALISM WITH COATED TONGUE

*To the Editor:*—**A man aged 21 has a complaint of excessive thick, whitish foamy saliva of several months' duration. The thickness at times interferes with the act of talking. Examination reveals nothing abnormal in general, and the salivary glands seem to be normal in size without any tenderness. The upper surface of the tongue looks whitish, and on scraping it with a tongue blade one obtains plenty of a thick, whitish secretion which is only slightly foamy and is acid to litmus paper. There is no tenderness or evidence of glossitis. The papillae do not look unduly enlarged. I believe that application of a mild silver nitrate or gentian violet and hydrogen peroxide mouth wash probably will check the condition. Not having seen or heard of such a case, I am in a quandary.**
S. H. Babington, M.D., Berkeley, Calif.

ANSWER.—The primary condition which has been described is probably ptyalism (hypersecretion), and it can arise from a variety of causes, including mental and nervous conditions, acute fevers, stomatitis and other conditions. Mercury, iodine and tobacco have been described as causes, and irritation of the esophagus, gastric hyperacidity and peptic ulcer have also been found to be associated. Since there is no general abnormality and no local inflammation the cause would apparently fall into one of the other groups. It is assumed that there is not an obstruction of a salivary duct, since the absence of swelling was noted.

The condition of the tongue may be due to the same fundamental condition and is of secondary importance. The presence of a white coating is not characteristic of a fungous infection and simply suggests a failure of the cells to exfoliate normally.

It is suggested that the gastric acidity be tested; tincture of belladonna may be used in doses of 5 to 10 minims (0.3 to 0.6 cc.) or so three times a day, and mouth washes of zinc chloride or magnesia magma preparations may be used for a trial. A definite prohibition against taking drugs should be made, and smoking should be stopped if the patient smokes at the present time. If these methods do not give a clue or a cure, observation of the local and general condition may be the only answer.

## HAZARDS FROM LATEX CEMENTING

*To the Editor:*—**Can you give me any information concerning the solvent used in connection with latex in the manufacture of shoe soles? I have a patient who has been working for the past six months with latex, which she sprays on shoes. She has a severe dermatitis, cough and secondary anemia, and I am wondering if some benzene derivative is used which might be causing her anemia. There is apparently no depression of the granulocyte or lymphocyte series.** M.D., Illinois.

ANSWER.—Latex as used in the manufacturing of shoe soles consists of a suspension of rubber in a weak solution of ammonia. It is used as a cementing agent. Such a material may cause a dermatitis, and in an allergic person it is possible that bronchial asthma may develop. The concentration of the ammonia in the latex cement is so low that it is unlikely to cause bronchial irritation. The presence of secondary anemia in the patient described cannot be ascribed to the latex cement. Assuming that other causes of secondary anemia have been ruled out, anemia of this type might indicate that rubber cements containing benzene are also being used. Rubber cements, unlike latex cements, which ordinarily contain no organic solvent, consist of rubber dissolved usually in either benzene or naphtha. Of the latter two solvents, benzene is by far the more dangerous, and, if it is found that benzene cements are being used, the patient should be removed from such exposure. Ventilation should be applied to any operation in which there is a likelihood that benzene vapors from the process might build up a dangerous concentration in the area of work.

## FISH TAPEWORMS

*To the Editor:*—**Would you give me the information concerning the possibilities of infection with fish tapeworms through infected water? Any additional information which you can send concerning the diagnosis of the condition and treatment of the patients, as well as methods of clearing the water, will be appreciated.** M.D., W. Va.

ANSWER.—As many species of tapeworms which parasitize fish are not capable of infecting man it would be advisable, if this has not been previously done, to submit specimens to a specialist to make sure that Diphyllobothrium is the tapeworm in question. Identification of the worm in this case would involve experimental completion of the life cycle in a susceptible vertebrate, since the sparganum stages of the various species of this genus found in fish are at present indistinguishable by direct examination. Human infection by the adult worm is established only by the ingestion of the sparganum stage from fish, which occurs either by eating poorly cooked infected fish or by accidental transfer of the spargana to the mouth after handling infected fish. Human sparganosis might be obtained from the drinking of water containing infected Cyclops. The prevention of human infections would vary considerably in method, depending on the species of worm involved.

## MALARIA NOT CAUSE OF EYE INFLAMMATION

*To the Editor:*—**Recently I heard of a case in which a physician told a patient that the cause of his ocular inflammation was a malarial infection of the eye. I had understood that a malarial infection was always an infection of the blood stream; if this is wrong I want to know it. Is there such a thing as a malarial infection of the cornea and other ocular structures?** M.D., Mississippi.

ANSWER.—There are no inflammatory reactions of the eye that have been shown to be the result of a malarial infection. This is not unexpected, as malaria is a noninflammatory type of infection and in general does not invade tissues other than

the red cells. Not infrequently malarial infections caused by Plasmodium falciparum are so overwhelming that by capillary occlusion symptoms are produced referable to the area most involved, as cerebral, gastrointestinal or urinary, but disorders of the cornea or of the other ocular tissues have not been recognized as complications of malaria. It is entirely possible, however, that any inflammatory condition of the eye could coexist in a patient with malaria, but there would be no direct connection between the two infections.

## POLLEN INJECTIONS AND PURPURA

*To the Editor:*—A man aged 36 has had symptoms of pollinosis due to ragweed and has received preseasonal immunization followed by one injection a month. During the past nine months he has received once a month an injection of 1,000 protein nitrogen units of ragweed combined extract. Six weeks ago the patient had a dermatitis identified by two competent skin specialists as purpura simplex. The rash disappeared after three weeks. Two weeks later he was given 800 protein nitrogen units of the ragweed extract, following which he had a few purpuric spots appear. I should like comment and recommendations.

M.D., Connecticut.

ANSWER.—The occurrence of purpura after injections of pollen extract is extremely rare, and it is questionable whether there is any connection between the two. The fact that the patient is allergic to pollen leads to the belief that he may be allergic also to foods, and a search should be made for one or more foods as a possible cause for the purpura. The patient should receive his pollen extract regularly and should discontinue only if purpura follows each injection. Many men believe that injections once a month are spaced too far apart. In most cases the perennial treatment is done at intervals of once every two weeks.

## SULFONAMIDE DERIVATIVES IN INFLUENZA

*To the Editor:*—Some of my patients have told me that while in the United States they contracted influenza and were given sulfanilamide or sulfapyridine, and that this seemed to be a common procedure. As far as I can find out from The Journal and other publications, no recognized authority advises the use of these drugs, and I am inclined to think that their use in such a mild disease should be criticized rather than encouraged. What is the consensus on this subject? The free use of these drugs in many minor diseases causes some patients to think that those physicians who do not use them are behind the times.

David Hoehn, M.D., Fairbanks, Alaska.

ANSWER.—In experimental procedures there has been no evidence that the sulfonamide drugs have any beneficial effect on the course of infection with influenza virus. There is no basis, therefore, on which to assume that such therapy would be effective in human beings with the virus infection. On the other hand, complications are to a great extent due to the bacterial agents. Since they respond to the chemotherapeutic agents, the drugs may be of definite value in reducing the incidence of complications. It seems unwise, however, in the case of the relatively mild epidemics to subject the patients with the uncomplicated disease to extensive administration of sulfonamides.

## OPERATIVE TREATMENT FOR OCCLUDED OVIDUCTS

*To the Editor:*—At the age of 18 a woman had acute gonorrheal bilateral salpingitis. She was treated in bed a month or two and made a good recovery. The gonococcus was identified on slides. Since the recovery she has had no recurrences or flare-ups. She is now 33 and has been married since the age of 22. She has been nervous since the gonorrhea, and red blotches appear on the neck and the chest when she becomes nervous. Her blood pressure is now 160 systolic and 75 diastolic, and she weighs 125 lbs. (56 Kg.). She complains of fatigue on some days. The thyroid is not palpable and there is no tremor of the hands. She has never been pregnant; she menstruates monthly. Is there any treatment for the nervousness and fatigue? Is there any operation or anything that can be done so that she can become pregnant? What would be the effect of removing the lateral two thirds of each tube, and would an abdominal pregnancy be as apt to occur as an intrauterine pregnancy? In abdominal pregnancies in which the cord is cut and tied close to the placenta, and the placenta left adhering to the intestines, what are the possibilities for ultimate results?

M.D., Pennsylvania.

ANSWER.—The nervousness and fatigue should be accorded the usual medical care for such troubles.

Abdominal operations on the oviducts in cases such as this are followed by normal pregnancy in about one third of the cases. If the patient wishes an operation (she should not be urged to have one) the husband should first be examined for fertility. Then the patient's tubes should be tested for patency. If these are occluded, some gynecologists resort to uterosalpingography before attempting operative relief. The risk of tubal or abdominal pregnancy is not notably greater than in the average normal patient.

## DETERMINATION OF ANDROGENIC HORMONES IN URINE

*To the Editor:*—I have been testing the content of androgenic hormone on a twenty-four hour specimen of urine by the capon method, according to the directions given in Kracke and Parker's Textbook of Clinical Pathology (ed. 2, Baltimore, Williams & Wilkins Company, 1940, chapter 24). I have found that the extracted residue after evaporation does not go into solution with ether but remains insoluble as a brown powder. Can you give me any suggestions as to the reason for this or suggest the further carrying out of the assay with this residue? I shall appreciate any information you may be able to offer.

M.D., Nebraska.

ANSWER.—The only reason for the appearance of a powder-like residue in the benzene extract could be failure to remove all precipitates from it before evaporation. The filtered benzene extract should be a clear, colored liquid without any droplets of water or particles in emulsion. The evaporation on a hot plate should be done without unnecessary overheating, and the residue should be a thick, oily fluid of about a fraction of a cubic centimeter. This will go completely into solution in the ether, producing a clear, highly colored ether extract. Any small precipitated matter which is found after evaporation of the benzene may be filtered off from the ether and removed.

## COW'S MILK IN INFANT FEEDING

*To the Editor:*—1. What dilutions of cow's milk are commonly used by the large maternity centers during the first two weeks of the neonatal period? 2. Where and by whom was reported a high incidence of tetany in connection with high concentrations of cow's milk during this period? 3. Is it now a common procedure to boil the cow's milk for five minutes before making the dilution? What is the scientific basis for such a procedure?

M.D., California.

ANSWER.—1. The usual dilution is equal parts of boiled cow's milk and water with 3 to 5 per cent carbohydrate. After the first week if the mother's milk is scanty this may be increased to the full caloric requirement.

2. There has never been a high incidence of tetany in the newborn reported from any cause, certainly not from high concentrations of cow's milk. This was simply suggested as a possible etiologic factor by Bakwin (Pathogenesis of Tetany of the Newborn, *Am. J. Dis. Child.* **54**:1211 [Dec.] 1937).

3. Cow's milk should be boiled for five minutes for two reasons. Boiled milk is bacteriologically the safest, and it is more easily digestible, as the curd of boiled milk is finer, softer, more porous and more permeable to digestive enzymes.

## USE OF PROCAINE HYDROCHLORIDE WITH EMETINE

*To the Editor:*—The parenteral administration of emetine hydrochloride is definitely a painful procedure at best, especially after the patient is well into his course of treatment. As a result, not infrequently the patient will evade treatment. In order to avoid this result I have been using procaine hydrochloride, 1 or 2 per cent solution, as the solvent. This has made intramuscular injections painless, much to the relief of the patient, which in turn assures one an unbroken course of treatment. Although I began this but three months ago, no untoward symptoms have been noted nor has the efficacy of the treatment been impaired. Are there contraindications to giving emetine in this manner from a pharmacologic standpoint or otherwise?

M.D., U. S. Navy.

ANSWER.—There would not be any pharmacologic interference of procaine with emetine, nor would there be danger of toxic effects from the repeated hypodermic injection of 1 cc. of 1 to 2 per cent procaine solution, except with hypersusceptible patients.

## ATROPHIC BREASTS

*To the Editor:*—A patient complains that since the delivery of her three children her breasts have been atrophic and she desires to know, for cosmetic reasons, if there is anything she can do to make the breasts larger.

T. C. McDougal, M.D., La Grange, Ill.

ANSWER.—Enlargement of atrophic breasts has been reported as following the use of estrogen, either by injection or by local application of an ointment containing estrogen. The breasts, it has been stated, may recede in size following cessation of therapy. Prolonged administration of estrogen to maintain breast growth is not advised, as this therapy may well disturb the ovarian function and result in an abnormal menstrual cycle.

## ALLERGIC CONJUNCTIVITIS

*To the Editor:*—The answer to a query on allergic conjunctivitis, March 22, 1941, page 1337, contains an error apparent to the allergist. In the second paragraph of the answer it states that "the intradermal testing for the causative agent may reveal little, as cutaneous tests seem to be of little value in allergic conditions of the eye." Conjunctivitis due to pollen is a frequent condition, and its diagnosis may be readily determined by the cutaneous test, a most useful procedure. Other inhalants which produce conjunctivitis may also be identified by the cutaneous test, but I cite the pollinosis cause in view of its frequency. Even the less sensitive scratch test is of value in diagnosing pollen conjunctivitis.

David Louis Engelsher, M.D., New York.